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PETROLEUM.

OIL! OIL! OIL!

THE NEW GREASE IN THE BASIN OF THE OHIO VALLEY, BIGGER THAN THE OLD GREECE ON THE MAP OF EUROPE.

The oil territory on the Allegheny and Monongahela rivers, and their affluents, in Pennsylvania, equally with the oil territory on the Ohio river and its tributaries, in West Virginia, Ohio, and Kentucky, is within the hydrographic basin of the Ohio river, which is bounded by the Allegheny mountain and the Mississippi river, the Allegheny river being the elongation and source of the Ohio river.

What is doing towards the development of oil territory in the Ohio basin, in the districts where there are upheavals, fissures, crevices, etc., will appear in the subjoined extracts taken from a letter which occupied *eight and a third columns* of *The Press* of December 5th.

These extracts show that the Trans Allegheny Grease is of greater area than the Trans-Atlantic Greece, the oil regions on the Allegheny, the Kanawha, and the Muskingum, filling the world with as much wonderment, and more speculation, than did the States of Athens, Sparta and Thebes, in their palmy days.

The *Press* says:

Take the map of Virginia, and you will find that in a southerly direction from Parkersburg, in the adjoining county of Wirt, a small creek empties into the Kanawha river, known as Burning Spring Creek. There are a number of other streams in the neighborhood, such as Standing Stone Run, Nettle Run, Ready Run, Two Riffles Run, Chestnut Run, and others that only make their appearance in the oil company maps. This point, lying in a southwesterly direction from Oil City, is the heart of the present Virginia oil region, and around it, for a radius of fifty miles, embracing the counties of Tyler, Pleasants, Wetzel, Ritchie, Wood, Wirt, Roane, and Calhoun, we have what is known as the West Virginia Oil Territory.

All along the (Kanawha) river and on the banks of its tributary rivers, we find evidences of the great panic that suddenly strangled the enterprises of 1860. Every few rods we see the black and mouldering derrick and the unfinished well in the ground. The few brave men who remained have made princely fortunes—the Rathbones, Camdens and McFarlands being among the oil princes of this new domain. They made their money by buying these lands at low figures, sinking good wells, and disposing of their purchases to the companies recently formed in New York and Philadelphia. Around the Burning Springs there are but few wells throwing up oil, and these are not recently developed, but the remnants of wells that have produced as many as one thousand barrels per day, in their time, the gas sending up the oil in a thick, rushing stream as high as the tree tops, so that no tank could hold it, and it rushed out into the river and covered the stream. The old "Eternal Centre" well is eccentric. It was discovered by one of the Rathbones in 1860, and when struck the finder clapped his hands, and shouted, for he had found, he said, "the eternal centre of the great oil basin." It does not flow in a stream, but every six hours sends forth a few barrels, making a yield of about twenty or twenty-five barrels a day. The other wells in this vicinity are pumping wells, and some of them reach as high as fifty or a hundred barrels a day. And yet, in justice to those who have spent large sums here, it must be said that when we speak of West Virginia we speak of a business that is in its absolute infancy.

THE LINE OF THE GREAT UPHEAVAL.

Although I confine my remarks to this narrow spot, called the wells of the Burning Spring, it must be remembered that the territory I traversed from Bull Creek to Tyler county, and thence to Park Creek, embraced the greater part of a hundred miles. There is what the geologists call a belt of oil land running from Tyler county, Virginia, to Charleston, in Kanawha county. Take a map of Virginia and stick a pin at the point marked Middlebourne, in Tyler county. Thence carry the eye in a southwesterly direction until you reach Charleston, in Kanawha county, in the great Kanawha river. We will suppose this belt to be thirty miles in width, and we have the oil territory before us. It embraces nine counties: Tyler, Pleasants, Ritchie, Wood, Wirt, Calhoun, Roane, Jackson, and Kanawha. In all these counties oil has been found. In Wirt county more wells have been struck—and in Tyler county, which seems to be a counterpart of Wirt, the geological features are strongly marked. I did not visit Kanawha or Jackson county, as the country was too unsettled for random travellers; but in all the other counties I found the same singular geological formation. The hills seem to pitch and toss and tumble as though the Titans had been hurling mountains at each other in some early supernatural war. They have a confused, whimsical look, and by their combinations excite odd and amusing fancies Yet these strange rocks are followed by the oil-hunters with as much avidity as gold diggers in the beds of California rivers. I do not propose to tempt any criticism upon my geological acquirements by endeavoring to explain these hills or to read the riddles that lie hidden in their coveted caverns. We know that water and fire are the agencies that have revolutionized the surface of the earth; and that in following up our oil investigations, we have merely to consider the relations of the stratified and unstratified rocks that run along the Alleghenian ridges. Coal, which is a near relation to petroleum, according to many, nothing more than petroleum hardened by some hidden chemistry of nature is found in that group of secondary rocks which includes the red sand-stone and mountain limestone formations. Petroleum is found in the bituminous measures and the sandstone rocks. The men who work the wells will tell you that there are three sandstone rocks in which oil is found. They bore until they strike the first rock, at a distance of from sixty to a hundred and fifty feet, and find what they call the surface oil. This exhausts rapidly, and in many cases does nothing more than emit gas and salt water, and thin streams of oily water. Some of the most successful wells in Western Virginia were surface wells; but in Pennsylvania the borers try to reach the third rock. Here, at a depth of from three hundred to a thousand feet, as the formation varies the large basins of oil are found—the basins which have given Pennsylvania sixty millions of wealth. The ignorance of this fact led many of our early pioneers to abandon in despair their enterprises. They sank a well to a first or second sandstone, and finding a trickling stream of oil, and no more, they abandoned the enterprise poor men. Shrewder managers drove their drills deeper, and gloried in wealth.

THE GEOLOGY OF PETROLEUM.

This "belt" of oil land lies in what the geologists call the coal measures. It is not independant or exclusive, but reappears in the southwestern counties of Pennsylvania, and again in Ohio along the valley of Muskingum. It is one of many similar deposits or formations. We find it in Canada, in Indiana, Michigan, Tennessee, Kentucky, and New York. It has come forth plentifully in our Venango county. Yet we know that there are oil springs in Russia where the traveller can push his cane into the earth and see it bubble around him, and that at Burmah, India, there is the celebrated Rainanghong oil district with its five hundred wells. Science is busy giving us rules for gathering the oil, and labor and capital are busy showing Science how she is partly right and partly wrong, and not to be depended upon in her petroleum investigations. Now, in comparing results we find that oil is found in the corniferous limestone, a rock composed of fragments of coal and seasbells filled with bitumen. Overlying this we have the rock known as the Marcellus shale, a kind of hard slate formation. Between these two rocks, the limestone and shale, all the oil reservoirs are found. In Canada, we find there rocks not to be more than one hundred and fifty feet thick, making the oil comparatively surface oil. In New York oil is found in another group of rocks similar in formation, but at least three hundred feet deep. In West, Virginia these geological indications are very strongly marked, and I think upon the practical operation of the next three months much of what we call the science of petroleum will depend. The surface indications are more remarkable than in Ohio or Pennsylvania. These tumbled rocks certainly show large crevices beneath, in which oil might distil for ages. We have bitumen and asphaltum, and we have had oil; and so, if there is any logic in Nature, oil must be here. Yet we find on Bull Creek, in the very line of this upheaval, and within a few rods of the Horseneck Well, borers have found large cavities empty or filled with mud. I saw a forlorn young oil hunter at Bull Creek, who, after boring for some weeks with good indications, came to a crevice where his tools were lost. He had not found a bottom to his fissure when I left, although he was bravely determined to fathom it. It is possible that here, as on the Little Kanawha, below Parkersburg, the fissures are occasioned by the drying or shrinking of the rocks.

HUGHES' RUN.

Having spoken of Burning Springs, and given you an idea of the great enterprise there existing, it is proper that I should make more particular allusion to other points which are now in the hands of capitalists and which command the attention of buyers and sellers in the East. Next the Burning Springs proper, the most important part of West Virginia seems to be Hughes' river. It is a stream about half as wide as the Schuylkill, and so shallow that at most seasons of the year a horse can ford it. Flowing into the Kanawha, and running in a northwesterly direction, it forms a part of the boundary line of Ritchie and Wirt counties,

and intersects the Little Kanawha at a point called Newark, some twenty miles from the Burning Springs Run. It is in the line of the great upheaval; and there are many interesting geological features in this country. It is evident that in the petroleum age the geological disturbance was very great. Through this line of upheaval the Hughes' river forces it way, and around it we find many new and interesting strata which seems to have been thrown up from the very centre of the earth. The rocks of Hughes' river seem to be of a light colored compact flint, of about ten or twelve feet in thickness, beneath which are seen the shale rocks strongly impregnated with bitumen—a rock which is often seen in our coal measures. I do not know that any coal has been found on the Hughes' river, nor have any fossils, such as are often seen in the shale rock, been discovered. At the same time, the oil men, whether trusting in their own instincts or the teachings of geologists, have laid violent hold upon these high and rocky banks, and now ask large sums for their possessions. In former years, large quantities of petroleum were taken out of the alluvian bank of the Hughes' river by a natural process. The rock was separated, and through the fissure the oil ran for years, saturating the stream. Former settlers, who gathered the oil in small quantities for medicinal and domestic purposes, were in the habit of laying bare this stratum by removing the earth and digging out the oil with hoes, axes, and farming utensils. It has been said that, with the exception of Venango, the oil has flowed here in greater quantities than anywhere else. A number of wells have been sank, but when I passed through the country the enterprise had not been far enough developed to make Burning Springs and Oil Creek in any way dread its rivalry.

BULL CREEK.

Another point in Virginia is known as Bull Creek—a stream which runs into the Ohio river some 30 miles above Parkersburg, taking its rise in Wood county and being one of the number of streams which are known as French Creek, Cow Creek, McElroy Creek, and by other names that belong to the classic vocabulary of Virginia. The Horse-neck well, some six or eight miles from the source of the creek, has attained great celebrity, and was, in its day, one of the most successful enterprises in Virginia. The supply of oil has greatly decreased, I am told, but, at the same time, it is a curiosity, and is always visited by travellers through this region. The country around Bull Creek is tame when compared with the vicinity of Burning Springs, and might be regarded in Pennsylvania or New York as very pleasant farming land. Here, as in Ohio, the capitalist and the artisan are very busy. Wells, have been sunk, leases are constantly granted, and as we ride along the quiet, old fashioned turnpike, the tall derrick, with its skeleton pillars and quick busy engine, and swearing teamster, as he toils through the mud with his load of oil, give us, on a small scale, the busy sights of Venango. Further up the Ohio, at Sistersville, we come to what seems to me to be the beginning of the Virginia line of upheaval. In Tyler county, especially around the county-seat, Middlebourne, the evidences of oil are very abundant. This is so near our State that one almost imagines he is riding on Pennsylvania farms and homesteads.

RECAPITULATION.

Out of this speculation and fanfaronade, I can sum up the results of my ten day's journeying thus:

I. West Virginia is but partially developed, and, therefore, all purchasers of land are speculative, and not investments.

II. The oil territory that extends from Middlebourne, Tyler county, if the surface indications are borne out, will be the great oil basin of the Continent.

III. That in West Virginia, if capital should fail to find recompense in petroleum, the abundant mineral indications will repay enterprise and skill.

IV. That with the pacification of the country, the slack-water of Kanawha, the building of a railroad along the line of the great upheavel, and the erection of mining and manufacturing facilities, West Virginia will become an empire of industry, wealth, and skill, and the valley of the Ohio become as prosperous as the valley of the Merrimac or Delaware.

OHIO AND THE MUSKINGUM.

Although we have been devoting ourselves to the neighborhood of Burning Springs, we find, by again referring to the map of Virginia, that the oil belt of which we have been speaking extends across the valley of the Ohio into the valley of the Muskingum, and the excitement which has been raging in this West Virginia wilderness for the last six months has now been chiefly transferred to your own distant counties of Greene and Fayette, and along the Ohio river from Pomeroy to McConnellsville. The presence of oil in McConnellsville, on the Muskingum river, about forty miles from the town of Marietta, in the county of Morgan, destroys the theory of those who imagine that the oil deposits of the valley of the Ohio are confined to the line of upheaval which runs from Middlebourne, in Tyler county, to Charleston, in the Great Kanawha river. But if McConnellsville is not in the direct line of the Burning Springs range, it certainly has the same relation to our own oil springs in Pennsylvania, for a line drawn directly southwest from Franklin or Oil City would strike McConnellsville more readily at any point in the counties through which I have been travelling. The oil territory of Ohio is by no means so wild or romantic as the counties of West Virginia, and the absence of warfare, the comparative quietness that reigns all through that region, and the protection given by the Government, have enabled the citizens to more thoroughly develop their resources than our friends in the Kanawha. The oil in Ohio has not been found in as large quantities as at Burning Springs or Oil City, and the quality is thicker, as if containing more carbon, and, coming from the well, has a black, heavy look, unlike the green or yellow appearance of the common petroleum. For commercial purposes the Ohio is more valuable, and is known in the market as lubricating oil. It has more the appearance and consistency of tar, while petroleum, although various in its shades, might be mistaken for a combination of Peruvian bark and Sherry wine. The town of Marietta is the centre of the oil district, and divides the honors with Parkersburg, from which it is not more then twenty miles distant. It is connected with Cincinnati and the West by rail, with Wheeling and the East by the navigation of the Ohio.

OIL CITY THE COURT OF GREASE.

In the morning we started off to view the far-famed Oil City. Can I describe this place? Do you imagine a city of banks and highways and dwellings, and rushing men and women eager to be rich, a city of Chestnut streets and Broadways and Pennsylvania avenues? If so, abandon the idea, for Oil City is nothing more than a long, narrow mud-flat, that seems to sprawl at the feet of high shale rocks. It is the delta of the Allegheny river and the adjacent stream of Oil Creek. You do not find it in the census or upon the maps, for it has grown in a night. It lives in newspapers as a city, and as a habitation for men is nothing more than a collection of houses, low-roofed, dirty shanties, hastily put up, without much regard to our natural disinclination to cold and rain; a city of hotels and offices, filled with booted, muddy, heavily-clad men, surrounded by tall derricks, that look like the shipping of New York or Philadelphia; and so, sprawling through the mud, far on to Titusville, for twelve or fifteen miles, it might be easily conceived to be a nest of moles burrowing in the mud, to find the price currents of foreign markets and the stock lists of foreign exchanges the recompense for depriving themselves of every imaginable comfort. If you wish to live in mud, to walk in mud, to ride in mud, to see nothing but mud, to have the color of your clothing obscured by mud, to inhale nothing but an air burdened with gas and petroleum, and to see what a livid, hungry, anxious genus of animals men are when they are bitten by the money-getting tarantula, by all means come to Oil City and take up your abode in one of its hotels. Here King Petroleum reigns, seated upon his muddy throne, and sends off upon the shallow waters of this muddy river millions of wealth to beautify and gladden all portions of the world.

DISCOVERY OF ROCK OIL ON THE NORTH RIVER.

OIL STRUCK NEAR FISHKILL

We take the following from *the World* of January 16th, 1865.

The good people who live in the township of Fishkill, in Dutchess county, of this state, have recently had, and are now under the influence of, a most alarming attack of the oil fever. The staid and sober descendants of the heavy Hollanders who aforetime inherited the beautiful region bordering on the Hudson, have been for the past three months in a mixed state of incredulity and excited belief respecting the reported discovery of petroleum in the marshes which skirt certain portions of the Matteawin or Fishkill creek. Of course this report was first looked upon as the coinage of some over-cunning brain, and the persons who were engaged in spreading it viewed either as imposters or credulous fools. But as time passed on, shrewd men from New York and the Pennsylvania oil regions invaded the hitherto pastoral quietude of the ancient borough of Fishkill, and proceeded to investigate the phenomena which had so bothered the good farmers of that ilk, incredulity gave place to belief; and the conversion was sealed when it became known that a corporation, styling itself as the Hudson River Petroleum Oil Company was formed, and the facts and surmises soon became the table-talk and engrossing subject of discussion in every farm house throughout that beautiful region.

THE NEW OIL REGIONS WHERE THE PETROLEUM INDICATIONS WERE FIRST DISCOVERED.

The new oil region is within 70 miles of the city of New York, can be reached by the Hudson River Railroad, and the locality in which the oil was first discovered is situated some four miles from Fishkill Landing, near the little manufacturing village of Glenham. On arriving at Fishkill station, if the traveler on oil intent should drop in at Meyers' hotel, he will see tangible evidences of petroleum in the shape of the article itself, as kept in bottles (though not behind the bar, and not for "lubricating" purposes,) by the proprietor of the hotel. This oil is readily tendered for subjection to the tests of such incredulous investigators as may be expert in the business. As it is within the range of possibility that the landlord may have procured his "specimens" at some other place, having proper self-interest in view—and ile-sinister, as it were to prospective profits, the inquiring visitor may be pardoned the doubts he shares in general with the mass of petroleum seekers who visit the hotel of Mr. Myers. Hence he proceeds at once, by carriage or sleigh, according to circumstances, to Glenham, which can be reached by a pleasant ride of less than half an hour.

SITUATION OF THE OIL LAND.

The principal oil land lies immediately across Fishkill creek from Glenham, and is found in a swamp or marsh which the owners have hitherto endeavored to reclaim, by ditches and drains, in the hope of making it of value in grazing. It is on the surface of the water in these ditches, or "runs," that the oil indications are most plainly exhibited. It may be remarked here, however, that since the first evidences of the existence of oil in this region were found, the farmers roundabout have instituted critical examinations upon their own lands, and, comparing notes, have found that traces of petroleum, or something very much like it, are perceptible throughout the entire valley. Mr. Isaac W. Knapp, residing near Johnsville, testified that some time since he set about sinking a well, but after proceeding a certain distance, was compelled to discontinue labor on account of the, as he considered it, noisome stench proceeding from the hole, and because the water already reached was of so unquestionable a flavor that his family were unable to use it; and he was, therefore, compelled to sink a shaft at another point, at considerable pecuniary loss. Upon the Bloomer farm, situated on the skirts of the Fishkill mountain, and about five miles from Fishkill village, various phenomena seem to indicate the presence of oil, as, for instance, a greasy scum, giving out the odor of petroleum, which is found upon the surface of the water,

and the indisposition of cattle to drink in any of the streams or pools where this oleaginous scum is present. There are wells also in the village of Fishkill itself, which, after yielding pure water for years have suddenly become tainted, and giving forth a fluid unfit even for horses to drink. Up to the present time this circumstance has been attributed to the proximity of the gas works of the village which, it has been supposed, affected the water. But as the gas is conveyed, as in this city, through pipes, it is clear that this explanation of the sudden affection of the wells is not conclusive.

THE TESTS OF PETROLEUM.

As numbers of people, many of them from Oil Creek, and the other Pennsylvania petroleum producing regions, as well as those, of West Virginia, are now investigating the surface scum of oil on Fishkill creek and its tributaries, a statement of the various methods put in operation in order to determine the actual presence of the rock oil may not be uninteresting to the reader.

An experienced oil-prospector will first carefully mark the color of the scum floating upon the surface of the water. Petroleum, under such circumstances, assumes prismatic colors; sometimes its hues are simply grayish or reddish, but in all cases its color sparkle in the sunlight—a fact due, perhaps to the mineral properties of the substance. Still, oxide of iron has sometimes an appearance very similar, and the mere color does not satisfy the searcher after oil. He next uses a cloth or handkerchief, and collects upon it, in the runs and streams, as much of the greasy scum as is possible. To this he applies the tests of feeling, smell and taste. The supposed petroleum may be a mere scum upon the surface of the water, resulting from the decomposition of vegetable substances; and this scum may in fact have an oily feeling to the touch. Genuine rock oil, however, has a taste of its own, very easily distinguished; and with its peculiar and characteristic smell every person who has ever used kerosene is familiar, a smell which cannot without resort to chemicals be disguised. But after our speculative oil hunter is satisfied that the object of his search really does exist in the banks of the streams, the next questions which arise is—May it not have been put there? may not its presence be due to extraneous causes? In other words, may not the lands have been "salted"? Of course it is possible, barely possible, to "salt" lands; but it must be remembered that petroleum is an exceedingly volatile substance, and to thoroughly impregnate a marsh and a collection of running streams and ditches would require a quantity actually enormous; and more than that the "salting" process must be regularly and frequently repeated. On the Jones farm, in Fishkill township, the indications of petroleum exist over a great surface; they are present in running streams, and by jumping upon the banks of these, and those of the ditches, the oil can be made to exude and cover the surface of the water. When our reporters visited the spot the ground was hidden by deep snow, and it was a somewhat toilsome journey to reach the streams where the phenomena were first discovered. After the snow had been removed, and holes dug in the swampy ground underneath, the peculiar prismatic scum was observed to collect, in nearly every instance, upon the water in these excavations. Almost the entire marsh has this peculiar property—that oil will gather upon the surface of its water, if the latter is allowed to stand undisturbed any length of time. The severest test of the presence of oil in the earth, is found in a very simple but convincing experiment. This consists in disturbing the bottom or bed of the stream upon which the peculiar scum has been found. While it is possible that the whole body of the marsh, with the banks of the streams might be artificially impregnated with petroleum, it is quite out of the question to doctor or "salt" the beds of the runs or ditches. The explorer, therefore, takes a stick and disturbs the earth at the bottom of the streams, and if oil is perceptible coming to the surface there is very little doubt of the presence of the genuine article, and that it actually proceeds from an interior reservoir or vein. Thoroughly competant oil men from Pennsylvania have brought into use all these tests in examining the oleaginous substance found in the Matteawan creek, and they are unanimous in the conclusion that it is nothing less than petroleum of a somewhat denser though finer quality than that found in Pennsylvania, and therefore a better lubricator.

WHERE OIL IS FOUND

The indications of oil are perceptible not only on the Jones farm, but on the Scofield farm, adjoining the latter, and also upon the farm of Mr. Waldron, which is about seven miles farther up the creek. They are seen as well in nearly all the low grounds in the neighborhood. Every day new discoveries of oil are being made along the banks of the little runs which constitute the tributaries of the creek. Traces of oil are also found on the Bloomer property, on the farm of Mr. Hatcher, and upon that of Mr. Baxter; while the foulness of the wells, heretofore referred to, has been noticed since several years in that section of the country.

A GEOLOGICAL REPORT UPON THE OIL REGION OF FISHKILL.

The following report by two of our geologists, regarding the petroleum phenomena at Fishkill, and the characteristics of the soil, addressed to the directors of a company now engaged in pushing an oil speculation in the locality referred to, is of interest:

GENTLEMEN:

We have the honor to communicate to you informally the results of our examination of your property near Fishkill, on the Hudson, N. Y., made some weeks ago with special reference to the occurrence of petroleum. Before describing the signs of oil upon the property, we take the liberty of mentioning one or two facts which our experience has taught us concerning this mineral fluid.

FIRST—The petroleum springs of this country have their origin everywhere in bituminous shales or limestones, and have probably nothing to do with the coal formation, since these rocks are considerably older.

SECOND—Petroleum follows the law of all liquids, e. g. water, and collects in basins or fissures, or both, with this difference, that it may rise in gaseous form and be condensed in an overlying layer of porous rock or soil, which there holds it like a sponge. Even in this layer, however, it will seek to collect in basins or fissures, wherever it is possible, and by subsequent evaporation of gases, it may come to be under great pressure, so as to spout, from a well with considerable force for a long time. When the pressure of gas ceases, which it will do in most cases, the oil must be pumped from its receptacle like any other liquid.

THIRD—The best conditions for the discovery of petroleum in abundant quantities are: 1st, a basin formed by a bituminous stratum, with some impervious rock below; and 2d, a layer of rock above, sufficiently porous to form a receptacle, as does the sandstone of Venango county, Pa. Other considerations relating to the quality of oil, ease of obtaining it, &c., are here omitted. We proceed to apply the above tests to your property.

A very decided basin is formed by the Gneiss mountains south of Fishkill creek, upon this farm, and a Trenton limestone north of same creek, which dips toward the Gneiss at an angle of about 45 degrees. West of the limestone an outcrop of Utica shales is seen. These shales lie just above the Trenton line geologically, and as this outcrop dips toward the basin referred to, it will probably be found that these bituminous shales occupy the basin, being therefore underlain by an impervious bottom of Trenton limestone and Gneiss.

Utica shales are mentioned by Dana as containing oil. They belong to the Hudson river formation, which produces oil near Albany. The value of the shales as oil-bearing rocks has never been tested, but the recent impulse given to the production of petroleum, will undoubtedly lead to thorough investigation of the matter. We looked for signs of bituminious coal on the property, but found nothing, as, indeed, we expected. We do not believe that coal hunting on the Hudson river will ever result in anything but failure. As we have said, however, the absence of coal is not at all unfavorable to the presence of petroleum, since the oil rocks were deposited thousands of years before the vegetable growths which were transformed by petrifaction into the coal of the great carboniferous system.

We have sworn that these lands possess certain favorable conditions for the production of oil. The best indication of the presence of petroleum, however, is petroleum itself, and this is not wanting in considerable abundance. The basin we have referred to is about 300 yards wide, between the creek and the Gneiss mountains. It presents on the surface a flat and often swampy meadow. Nearly in the center is a swamp of about one a half acres, full of brushwood, and almost impassable. Numerous small rivulets traverse it, and it is especially on these that the oil is seen in considerable quantities. They flow at once into Fishkill creek, the surface of which is likewise covered in many places with a thin coating of oil. The alluvian strata of this basin seems to be saturated with petroleum, so that if one stamps upon the turf by the brookside, the water becomes covered with oil. The phenomena is observable in the swamp. We believe that if a bore hole or a shaft were sunk here, it would strike the bituminous shale before any other rock, as the alluvium seems to be the only receptaale for oil above the shales of this basin.

You will see that there is less likelihood of fissures filled with oil than if the bituminous rock were covered with sandstone, as in Pennsylvania. On the other hand the peculiarities of this tract are more favorable for surface wells, not bored but dug down to the rock. Wells of this class have yielded very good results in Canada, where the oil is also found in the alluvium, and have paid on the whole better than the deep borings. The cost of a well of this kind is but trifling compared to that of a deep boring. It is not the part of the geologist to prophecy certain profit from any such undertaking. He can only warn against certain failure which in many cases he foresees, or collect all important facts which throw light on the subject, and thus narrow as much as possible chances of disappointment. We can say this, however, that all the indications upon your property are eminently favorable, and would amply justify the expenditure of sufficient money to test the quantity by surface wells. The only argument against the undertaking is the fact that it has never been before in that part of the country. An argument which has the less weight since the experiment has never been fairly tried, to our knowledge.

Respectfully,

(Sighed,) AL DERBERG & RAYMOND,
Mining Engineers,

No. 90 Broadway, Dec. 2, 1864.

POPULAR EXCITEMENT IN FISHKILL TOWNSHIP.

As might be supposed these oil discoveries have created the wildest commotion among the farmers who cultivate the beautiful region referred to in this report. At the first it was an easy matter to buy the farms at from $100 to $150 an acre, but now that the oil fever has reached its crisis, the farmers, as a general thing, are quite unwilling to part with their lands at any price. Almost all the people are old settlers, and the descendants of the pioneers of the country; in many instances the real estate deeds date back more than a hundred years. The majority of the farmers are well to do, and can afford to wait until such time as it shall be settled beyond a doubt that oil exists in remunerative quantities. Instead of selling their farms the majority of the landholders prefer to lease them to responsible parties, upon the condition that they shall have a fair proportion of the oil, should any be obtained on their property. The first company formed—the Hudson River Petroleum Oil Company—bought the land outright; but it will be difficult to do this hereafter.

GIGANTIC SPECULATIONS.

Several large operators have already taken this matter in hand, and have determined to thoroughly investigate the subject of mining for oil in the Fishkill valley. One firm that of Lewis & Robertson—have

secured many thousands of acres of land, and have pledged themselves to the farmers to commence sinking wells within six months from the date of the leases they have taken. The object of these gentlemen and the parties they represent is to test the matter thoroughly, so far as that section is concerned and to simultaneously sink some twenty or thirty wells at the most eligble points, not only in the valley, but in such gulches or gulleys of the mountains as their experience teaches them oil is most likely to be "struck." The speculation in which these gentlemen are engaged is probably the most gigantic of any now in operation on this continent, and if it succeeds it will put Mariposa and the Pennsylvania oil regions completely in the shade. By this time, probably, all the available land is secured, unless, indeed, the rolling country in the direction of the Harlem Railroad shall eventually be found oil-producing. If this shall prove to be true, petroleum will probably be discovered on both banks of the Hudson river, wherever the country is mountainous.

MNING.

THE COLORADO GOLD REGION—THE DOME STATE.

Pike's Peak, which looms up from the plain, snow-capped and cloud-kissed in the heavens, is the physical dome of the continent, and, therefore, Colorado is the Dome State in the grand political pile, whereof the foundation is the Constitution of the United States.

Colorado has its minarets in the peaks of the Rocky Mountains, the water shed and main divide, but its physical symbol is Pike's Peak, and hence we venture to christen it the Gold Dome State, for State prospective it is, and State in fact it will soon become.

The gold region of Colorado is on the east incline of the great summit, and is consequently in the Mississippi valley, that vast and bountiful hydrographic basin which is rimmed with gold in the Rocky Mountains and with coal in the Alleghenies.

As Pennsylvania sheds its waters down both slopes of the Alleghenies, so Colorado sheds its waters down both slopes of the Rocky Mountains, their fresh far flowing tributes to the nation's middle artery of internal commerce, mingling and commingling in the channel of the Mississippi, the outflow of the Ohio and the Platte. Thus the waters which descend west from Pittsburg, and the waters which descend east from Denver, meet and greet at Cairo, whence together to and through the Gulf of Mexico they seek the common highway of commerce to all lands.

Denver is nearer Chicago, very much nearer St. Louis than to San Francisco; and natural causes combine with artificial causes to pass the product and trade of Colorado east to the Mississippi and the Atlantic.

It is farther in miles from Philadelphia to St. Louis than from St. Louis to Denver, and everybody knows that *St. Louis is near to Philadelphia in time* and in convenient communication.

From the Atlantic seaports there is unbroken rail lines and regular trains to and into Kansas, and soon the iron way will be extended to and into Colorado, for the ground is favorable and the Government has donated lands and pledged means, in aid of railroads from the States into the Territories.

Pennsylvania, Ohio, Indiana, Illinois, Missouri, Kansas, Colorado, Utah, Nevada, California, are all on the same latitude, and make up the all potential row of Middle States which belt the nation and zone the continent.

The four States which cover the ground between tide water in the Delaware and the Mississippi river are prosperous communities, well developed commonwealths.

After the war, Missouri will re-enter upon the career of progress that marked her increase before the war overran her as a border State; and with peace in Missouri, Kansas will push ahead with quicker pace; meanwhile, the importation of machinery and mining labor into the Colorado gold region, will give thrift to its towns and cause the cultivation of its fertile savannas; and so, like the States east of the Mississippi, will the States west of the Mississippi grow and become great in population, productions and improvements.

Six commonwealths will divide the way from the Mississippi river to the Pacific ocean, and what these commonwealths are destined to achieve by development, will appear to the mind that can span their boundaries and appreciate their natural resources and political prospects.

These six States (counting the Territories of Colorado and Utah as States) are:

Missouri,	containing	67,380	square miles.
Kansas,	"	81,318	" "
Colorado,	"	104,500	" "
Utah	"	106,896	" "
Nevada,	"	82,790	" "
California,	"	158,687	" "

In like manner the gold bearing lodes of the parks of Colorado, which are of surpassing richness in the precious metal, are attracting thither, from the seaports and elsewhere, the necessary capital and labor to open mines and make the earth yield up its treasure.

And as from the Pacific the movement of population is east across the mountains into the silver land of Nevada, in the Great Interior basin, so the movement of population from the Atlantic is west up the tributaries of the Mississippi and across the plains which outspread at the base of the Rocky mountains, to the gold deposits in the Colorado parks.

Already is Colorado qualified to terminate its Territorial probation and pass into membership in the Union as a sovereign State—as the dome-crowned commonwealth—the highest natural object in the land's configuration.

Then will succeed Utah, for from Nevada population will overrun into Utah in the search and passion for gold and silver which pervade all the mountainous country between the Mississippi river and the Pacific coast, whereupon, with Utah made a pillar in the continental colonade of Middle States, there will be railroad facilities all the way from Kansas to California, as there are at this time railroad facilities all the way from Kansas to Maine.

During the last four years, notwithstanding that civil war has raged in negrodom—a region which sowed the wind and is reaping the whirlwind—there have been wonderful development and progress in all the Territories except New Mexico and Arizona; and Colorado, Idaho and Montana especially are swarming populations around new mines.

Colorado, however, is nearest, most accessible and available, and promises the least risk and the earliest return on ventures and investments. New York is already largely interested in Colorado gold mines, and Pennsylvania, to her investments in iron, coal and oil, is adding Colorado gold.—*U. S. Railroad and Mining Register.*

UTILISATION OF SMALL COAL,

Some few months since reference was made to an invention of Mr. Arthur Wall, from which he anticipated an extraordinary economy in the use of fuel both in connection with the manufacture of iron and in the generation of steam; and although the importance of the invention seems to have been somewhat exaggerated, it appears from the specification of the patent, which has now been published, that the suggestion might be turned to account in the rendering marketable of the enormous quantities of small coal now wasted at the pit's mouth. Mr. Wall's invention consists in combining (for use as fuel for steam-ships, locomotives, stationary engines, and domestic purposes, or otherwise) of the various bodies herein specified, by intimately mixing them together with other materials herein mentioned, and compressing the compound substance so obtained into masses or blocks of forms and sizes suitable for burning in furnaces of any description, so as to raise steam for land and marine boilers, or for use for domestic or other purposes. To effect this, he takes oil or oleaginous matter, whether animal, vegetable, or mineral, crude or refined Canada oil (commonly called petroleum or rock oil), paraffine, and mix these bodies or substances, or any of them with pitch, tar, resin, or turpentine, or the refuse of these substances, turf, moss, or peat, and either singly or together saturates them with sawdust or shavings, or other debris of wood or woody substances finely comminuted, and the substance so obtained he mixes with coal, coal dust, or slack, coke or cinders ground to powder or sifted fine, and when intimately mixed and ground together he passes them through a press and compresses them, when they are fit for use. When any combination is intended for steam purposes, whether for land or marine boilers, the best quality should be supplied, but for domestic purposes several qualities inferior thereto may be used with advantage. Mr. Wall considers that the mixed fuel, being composed of hydrogenous and carboniferous bodies, forms a kind of voltaiac pile—the hydrogenous bodies constituting the positive pole, and the coal, cinders, &c., the negative pole. As his positive and negative elements are all finely divided, intimately mixed together—the carbonaceous matters being pulverised and kneaded with the oils which are to supply the hydrogen—and compressed, they are likely to act very nicely. He claims that his fuel, from its being formed of nearly pure hydrocarbons, will be found to consume its own smoke, and any that may arise from any other fuel that may be in contact or burned with it, besides yielding an astonishing amount of light and heat.—*London Mining Journal*

THE MINERAL WEALTH OF TURKEY.

Turkey, in Asia, possesses some metallurgical establishments, treating argentiferous, plombiferous, and cupriferous minerals. The *Annales du Commerce Exterieur* mention, especially as regards silver, the works of Gumneh-Hane and Keban-Maden, M. de Tchihatcheff estimates the annual product of the first of these works at 17,520 okas and 40,000 drachmas, and that of the second at 142,350 okas and 160,000 drachmas. The *Annales* also mention the works of Archana-Maden, for the treatment of copper minerals, which, like the establishment of Keban-Maden, were founded by Austrian engineers; M. de Tchihatcheff estimates the annual production of the Archana-Maden Works at 720,000 okas. The presence of mercury has been indicated at Inact, Kreshova, and in the neighborhood of Foinicza and Sustika; that of zinc at Kreshovo; and that of arsenic at Kreshovo and Soitza. These substances, however, are not worked. A letter of M. de Tchihatcheff to E. Elie de Beaumont has made known the existence of mines of alum in Asia Minor, between the town of Chabhama-Karahissar and the coast. These mines, badly worked as they are by Armenians, yield, nevertheless, a profit of 25 to 30 per cent., and if submitted to a suitable working, they might give important results. The mineral is of great purity, and is extracted at little expense by means of works executed almost exclusively open to the sky. Turkey posesses mineral salt, lake salt, and marine salt. All Turkey in Europe is supplied by the salt mines of Rimnik, in Wallachia, the annual production of which is estimated at 65,000 tons, and by the mines of Okno in Moldavia. M. Heuschling indicates besides, that there exist two springs of salt water in Bosnia, salt pits in Albania and in Thrace, and mines of mineral salt in Asia Minor, between Kaledjik and Osmandjik. A curious geological fact is noted—the existence of two great salt wells in a complete desert in the plain of Mossoul—one at five days' journey from Bonara, and the other at two days' journey from Achqur. The Arabs of the Desert collect the salt, load their camels with it, and carry it to Mossoul, whence it is forwarded to Kurdistan. The lake salt obtained proceeds from salt water lakes at Kava, Gulf of Sarof, and Anchiala, on the Black Sea; in Albania, at Bastowna, near Aviona; at Paliuri, near Arta; at Tutschly; and in the pashalics of Sivas and Juzgath. The marine salt made available is furnished by the evaporation of the waters of the sea, especially on the whole western coast of Asia Minor.

VIRGINIA CITY, UNDERGROUND.

Few, even among the residents of Virginia itself, above ground, have more than a very vague iden of the extent of the thoroughfares meandering in almost every direction hundreds of feet beneath the streets of that city. The "local" of the Territorial *Enterprise*, has been taking a stroll through those underground ways, and writes of them as follows:

Few think, as they walk the busy streets of our town, that beneath their feet are streets almost as busy; that far down in the ever present midnight of the foundations of the mountains are crowds of men toiling as toil those above for gold and for bread. Many things to gratify the eye and afford food for the mind may be met with during a stroll through our streets above—our bright sunlit streets—let none conclude that there is nothing to be found to please the sight or excite reflection in our streets below—our dark night locked streets. Descending at the Chollar works, by a perpendicular shaft over four hundred feet in depth, one may wander off in almost any direction. By two or three different roads we might travel eastward nearly half a mile, finally coming out to the light of day in the southeastern suburbs of the city, among mills and miners' cabins; but we will take another course. Leaving the village of the Chollarites, we travel northward. Along the sides of the narrow streets are glimmering lights—some twinkling far ahead like distant stars, and others flashing suddenly upon us as we turn the corners with a blinding affluence of light. As we proceed on our journey we meet with many picturesque groups of miners at their labors. Here they are delving out chambers in the precious silver rock, and there hoisting into place the stout timbers that are to support the mountain and the city above. We pass through roomy caverns, whose space robs our candles of light, and in whose walls yawn dark galleries, leading we know not whither, and about and within whose black portals cubic pyrites and brilliant quartz crystals flash back the light of our candles in a thousand merry glow-worm twinkles. After passing through the subterranean villages of divers mining companies, we come to the thriving setttlement of the Savage people.—Having halted in their hospitable hamlet long enough to hear the latest underground news, and to make some inquiries relative to our road to the next village, the home of the Gould & Curry tribe, we take our leave and pursue our journey. Of course we see many wonders, meet with numerous adventures, and encounter more than one solitary traveler—but not a "solitary horseman"—walk on the brink of more than one yawning chasm, and experience numerous and mixed sensations, but finally reach the Gould & Curry clan in safety. We find them quite a civilized people. Although more than four hundred feet below the streets of the city, we here find a large building with a huge steam engine in it, puffing away as comfortably as though there was no surface to the earth, with green trees, singing birds and the bright sun shining upon all and everywhere. We enter the building, take a seat, sip a glass of champagne, light a cigar, and as we watch its curling smoke mingling with the white wreaths of steam from the hissing engine, wonder whether we are really within the earth or upon it.—Lamps are burning upon the walls, persons are passing through the room in which we are seated are going down stairs, coming up stairs, bustling in every direction—a new face each minute. We appear to have stumbled upon the gnomes. We find in passing through the village that the people here have railroads running in every direction, and—as in the world above—have to clear the track for the rushing trains that, with fiery eyes, dart wrathfully out from dark and lonesome roads. With a "whiz" the cars fly past us and speed away down along what seems one of the dreary lanes to Satan's sooty kingdom—a bye-way leading straight into the centre of his smoky capital. About us we occasionally hear the splashing of water, mingled with creaking sounds and pass through places where air strikes damp and cold upon our cheeks to enter where it is hot and stifling. Suddenly peals of thunder burst over our heads, and every gallery and cavern echoes its roar. Our nerves are soon quieted for we know that the noise was but the discharge of a ton or two of ore through some of the chutes above. There are inhabitants far above us toward the surface of the earth—the place is like a huge ant hill. Again upon a sudden our ears are rent by an explosion—above, below—somewhere, which causes us for a moment to suppose that the earth has burst in its center and is no longer a thing of substantiality. We know that it was but a blast which thus caused the whole place to shudder, and smile at our late nervousness. There are many roads leading from the Gould & Curry, and we might travel half a mile in several directions, but we will continue our journey northward and rise to the surface at the works of the Best & Belcher, through a shaft some four hundred feet in depth. Here we land nearly one mile north of where we descend. Our underground highways are being extended daily in every direction, and will soon be connected with those of Gold Hill mines, and these again with those of American Flat.—In a very few years more there will be miles on miles of these subterranean streets, meandering under and running from one to another of our cities.

PETITION FOR SALE OF THE MINES TO THE ACTUAL OCCUPANTS.—At a meeting of the miners of Colorado Territory, held at Central City, on the 8th of November, the following preamble and resolutions were adopted:

WHEREAS, Various propositions have recently been presented to Congress, foreshadowing a change in the policy of the Government in regard to our mines, looking to the realization of immediate revenue rather than their rapid discovery and permanent and successful development; and

WHEREAS, There is a great danger that such legislation may tend to cripple rather than encourage mining interests, therefore

Resolved, By this meeting of miners and other citizens of Colorado Territory;

1st. That we respectfully protest against the application of any system of tenantry to the operation of our mines.

2d. That we respectfully ask Congress to pass a law giving in fee simple, under prroper regulations, at least one thousand lineal feet of each lode to such person or persons who shall hereafter discover and develop the same.

3d. That we ask that the miners' titles to the mines already discovered, as at present held by them, be confirmed by Congress.

4th. That we ask for the establishment of a Mining Bureau in the Interior Department of the Government, and that Geological Surveys of mineral regions may be provided for.

GAS.

There seems to be quite an excitement created in London, England, in reference to the quality of the gas furnished by the various gas Companies. Loud complaints are made by the consumers, and new companies are being formed, made up from the ranks of those who use gas, and they start out upon the basis that they will be mutually benefitted by the organization—securing not only a better article of gas, but at a much lower figure. The London Gas Companies are now charging 4s. 6d. per 1000, for common gas, and the getters up of this new movement assert that they can, by this combination, furnish it at 2s. 6d. The *Sanitary Review*, in an article upon this subject, has the following:

The time was when we could read small type, and make out bad writing by the aid of a street gas lamp; but we are now puzzled to do this whenever we make the attempt. The gas at present supplied seems to be only a mere vehicle for conveying some hydro-carbon, possessed of greater illuminating power than the gas itself contains. There are different methods of effecting an improvement in the present bad light of gas.—Below the city street lights we perceive a small sepulchral looking urn, the shadow of which renders a certain space for some distance around, obscure. These urns contain naptha, the vapor of which being absorbed by the gas that passes over it, increases the illuminating power of the latter, or ought to increase it in the proportion of about five to three; or, in other words, three cubic feet of gas so napthalized, is intended to yield as much light as five cubic-feet unnapthalized: the street-lamps are limited accordingly in the supply of gas. The method in question, is a bungling application of a principle, which can be made highly advantageous, both in point of economy and increased brilliancy of light. Besides the naptha not being a homogeneous fluid, the lighter portion is taken up first, leaving the heavier portion behind, which is more slowly embodied in the gas, thus affording a less amount of light. So that the light good at the commencement, does not appear of the same quality after burning some time, a supply of fresh naptha being required to produce the first effect.

An apparatus, introduced by the Photogenic Gas Company, and patented by M. Mongruel, is also applicable to gas-lights, and may be applied to a large number at the same time. The vaporization of the naptha is effected, we believe, by numerous separate threads dipping into a thin layer of liquid naptha, by means of which the fluid ascends by capillary attraction, and the vapor constantly escaping from the surfaces of the threads, combines with the gas and napthalizes it. We have been led to consider another method of napthalizing by the prospectus of the Gas-light Improvement Company, who have introduced a novel and very simple apparatus for the purpose, which is secured to them by two patents; and by which they profess either to double the light, or to save half the consumption of gas. We think they might have simply said that they double the light with half the quantity of gas. One of their carburetters can be applied in a few minutes to a large or small number of lights. It is placed generally out of sight and by the side of the meter. This apparatus acts also by capillary attraction; but the Gas Light Improvement Company appear to have availed themselves of the best liquid materials for the purpose, and have so disposed of those materials that they act with perfect uniformity. As this carburretter does not require to be supplied with mineral spirit oftener than once a month, no one can complain that it gives much trouble to make a house, shop, or factory, as well as the gas-bill, much lighter than by gas alone. We can fancy the gas inspector coming at the end of a quarter, and examining his meter, then rubbing his eyes, thinking that he must have made a grievous mistake in counting, or a wrong entry at his last inspection. But he will find that the error does not rest with himself, but with his employers, who have long and resolutely supplied the worst gas, at the highest price, until the public have determined to help themselves, to a brighter light through the medium of some method of napthalization.

A Paris journal gives the following statistics respecting the manufacture of gas in Paris:

In 1854 the total quantity produced was barely 40,000,000 of cubic metres. The ten gas-works of Paris employ 2,691 persons for the indoor service, whose united salaries amount to about 2,342,000f. Besides these there are 448 lamp-lighters, &c., who each receive 60c. a day, amounting in all to about a million yearly. The whole length of gas-pipes laid down in Paris exceeded 200 leagues in 1861.

At Kirkaldy, in Fifeshire, Scotland, a ship has been despatched for the island of St. Thomas, with full cargo (nearly 500 tons,) consisting of gasometer, gas-pipes, bricks for building in the gasometer, retorts, &c., to be used in the erection of works for the manufacture of gas to light the principal town on the island of St. Thomas.

OIL IN ILLINOIS.—The Cincinnati Commercial learns that oil has cropped out in the neighborhood of the Illinois great coal field. Near the town of Gardner sixty miles from Chicago, where a coal shaft is turning out a liberal yield of coal, the precious fluid is said to have made its appearance.

WATER.

THE ALBANY WATER METER.

ALBANY, N. Y., Jan. 4th, 1865.

Mr Editor;—Time and experience having now established the value of the Meter which I am manufacturing for measuring liquids, I send you the following description of its character and operation.

Without the drawings for illustration, I can only give you a general idea of its construction, which is very simple, and of much less cost than that of any other reliable meter used. The parts consist of an iron case arranged for lining with sheet brass when desired, of a brass movement to actuate the spiral springs, the recoil of which moves the valve, and of the valve arrangement.

The form of the case depends on whether the water is measured by the up and down motion of a diaphragm, or of a piston. In either case the movement, (which is attached by a lever to the center of a brass plate on the upper surface of the diaphragm, or to the center of the piston, whichever is used,) and the valve arrangement, are the same. Their location also, is the same, viz: over the measuring chamber. In this Meter the cylinder and piston, therefore are but the equivalent of a diaphragm; and as I prefer the latter, I will confine my description to that form—premising that when desired it is just as easy to use the former without alteration of the principle of the Meter, or change in the construction or use of the movement and valve arrangement.

The case of the diaphragm Meter needs no further description, except to say that it is adapted in form to the easy movement of the diaphragm, and is without stuffing boxes except one for the small shaft connected with the registering apparatus out-side of the Meter.—Having all the parts so closely connected, the machine is very compact, one delivering 500 gallons per hour being only one foot high and one foot in its largest diameter—and one delivering 1800 gallons per hour being only six inches more in both these respects, &c. &c

The diaphragm, which is located in the lower part of the case, is made of brass and leather prepared for the purpose. Its flexible part (the outer ring of course) moves up and down in a curved form without creasing and for a short distance only above and below the center line, and from the peculiar construction of the valve is never subjected to pressure from the head. The whole diaphragm, therefore, is simply a floating partition of brass between the inflowing and outflowing water, with a flexible hinge which is never straightened and therefore cannot be subjected to strain. As it is well known that leather under these conditions is almost indestructible in water, it will be seen that no part of this Meter is more durable than the diaphragm, and that our arrangement avoids all the objections which apply to such a device as heretofore used for measuring water. On the other hand its advantages are great. Neither grit or dirt in the water impede its free movement or affect its accuracy, and from its pliability the head consumed in actuating it varies little, whether much or little water is delivered. Those using piston and cylinder Meters will appreciate these features, as from the resistance offered by a piston when moving fast and reversing suddenly, several feet of the head are lost, and no art has yet made a piston and cylinder which in muddy water will not soon leak badly.

Simple as the above diaphragm is, however, both in construction and action, it could not measure accurately, or last for any length of time, if there was pressure from the head upon it—except always the very trifling power required to stretch the springs which in their recoil move the valve. This feature is owing to the peculiar construction of the valve, whereby *the pressure above and below it is ballanced, and the flow of water the same whether the valve is at rest or in motion.* When I add that the valve is always reversed while the diaphragm is still moving, it will be seen, not only that there cannot be pressure from the head on the diaphragm, but also that there is no shock upon the pipes in the house, or inequality in the stream delivered, from the reversing of the valve. It also follows that from the very small force required to move the valve, the spiral springs used must be very durable, as they are never stretched over one eighth of an inch.

After the above description of its operation, I need not add that the novel single valve above described, is the great feature in this Meter, without which the remainder would be of small value. But that must not permit us to forget the movement used to actuate the valve. Without a drawing I cannot describe it, but as it is the result of two year's experiment, you can justly infer that it has the merit of simplicity. Long use has now proved, in addition, that its operation is certain, and friction of the parts reduced to almost nothing.

I have said that the movement is the result of two year's labor. In fact the entire Meter has been on trial during that time; it required that probation to detect its weak points, and guard its operation against contingences and under unequal pressure—very high as well as very low. And I am now prepared to prove by the results from actual use, or if preferred by a test made with the same Meter under a head of 3 inches and also of 200 feet, that it will register on drops, and that the delivery between the above extremes will not vary over 3 or 4 per cent. I am also prepared to sell the Meters to responsible companies on the condition that if after three months use they are not satisfied with them, they can return them to me. I mention these things simply as evidence of my faith in the character of the Meter. I have strong ground for that faith. For instance, one of our Meters has now been in actual use by a factory here for seven months without variance in the measurement. Another was run at Quebec under 400 feet head, and then was run on fast drops merely, for several days, without varying more than 2 per cent. in its delivery between the above extremes.

On looking over what I have written, I fear, Mr. Editor, I have been betrayed into far too much detail. Doubtless my personal interest in the subject matter treated of has influenced the treatment, but I have been beguiled into the indiscretion, if it is one, chiefly by the conviction that the time is at hand when our city Water Companies, in self defence, will be compelled to measure the water sold by them. Their annual reports for several years admit and urge this remedy as their only protection against the ever increasing waste which experience has shown no means except actual measurement can check—and which if not checked, must in many large cities shortly lead to the enlargement of their works at an enormous cost. Hitherto the large outlay which the general adoption of Meters would cause, in connection with the fact that the exigency foreseen by all was not immediate, viz: a certain failure of the water supply, unless either Meters were used or the works were enlarged—have led from year to year to the postponement of the question. But the late drought has admonished not only the Water Companies, but their consumers that such a course will not answer much longer—and when the decision is to be made between a judicious application of the Meter system and a far greater expense in enlarging the Works, can there be any doubt as to the result—especially when the increased revenue from the use of Meters has again and again been proved to exceed the interest on their cost? In truth the erroneous inferences which have been made from the latter fact, more than all other causes, have delayed the adoption of Meters. In all cities there is a great prejudice against measuring water, on the ground that it is a simple luxury in the enjoyment of which the poor should not be restricted. A little reflection shows that this prejudice is unfounded. It is not the poor who waste much water. Meters at the usual rates charged would *decrease* instead of *increase* the cost of it to them. Many experiments have been made by the Water Companies to settle that question with the same result. It is the large mansions of the rich and the great manufacturing Companies, who at the expense of the poor, are draining off the supply by careless use in water closets, water engines, baths, factories, &c. If Meters were used for such consumers only, charging small houses as heretofore, one of two results would certainly occur.—Either the waste would be checked, or the water revenues would be so increased, that to all, both poor and rich, the rates could be safely diminished.

When I have more time, I will send you some statistics illustrating this view of the water question which will surprise you; and I predict that when the subject is understood by the people the clamor for Meters will be greater than it ever has been against them.

Very truly yours, H. Q. HAWLEY.

ORIGIN OF BRANDY

Brandy began to be distilled in France about the year 1313, but it was prepared only as a medicine, and was considered as possessing such marvellous strengthening and sanitary powers that the physicians named it "the water of life," (l'eau de vie,) a name it still retains, though now rendered, by excessive potations, one of life's most powerful and prevalent destroyers. Raymond Lully, a disciple of Arnold de Villa Nova, considered this admirable essence of wine to be an emanation from the Divinity, and that it was intended to re animate and prolong the life of man. He even thought that this discovery indicated that the time had arrived for the consummation of all things—the end of of the world. Before the means of determining the true quantity of alcohol in spirits were known, the dealers were in the habit of employing a very rude method of forming a notion of the strength. A given quantity of the spirits was poured upon a quantity of gunpowder in a dish and set on fire. If at the end of the combustion the gunpowder continued dry enough it exploded, but if it had been wetted by the water in the spirits, the flame of the alcohol went out without setting the powder on fire. This was called the proof. Spirits which kindled gunpowder were said to be above proof.

From the origin of the term "proof," it is obvious that its meaning must at first have been very indefinite. It could serve only to point out those spirits which are too weak to kindle gunpowder, but could not give any information respecting the relative strength of those spirits which were above proof. Even the strength of proof was not fixed, because it was influenced by the quantity of spirits employed—a small quantity of weaker spirit might be made to kindle gunpowder, while a greater quantity of a stronger might fail. Clarke, in his hydrometer, which was invented about the year 1730, fixed the strength of proof spirits on the stem at the specific gravity of 0.920 at the temperature of 60 degrees. This is the strength at which proof spirit is fixed in Great Britain by act of Parliament, and at this strength it is no more than a mixture of 49 pounds of pure alcohol with 51 pounds of water. Brandy, rum gin, and whisky contain nearly similar proportions.

FISHES TRAVELING BY LAND.

Dr. Hancock, in the "Zoological Journal," gives a description of a fish called the "flat head hassar," that travels to pools of water when that in which it has resided dries up. Bose also describes another variety, which is found in South Carolina, and, if our memory serves us well, in Texas, which, like the "flat head," leaves the drying pools in search of others. These fishes, filled with water, travel by night, one with a lizard like motion, and the other by leaps. The South Carolina and Texas varieties are furnished with a membrance over the mouth, by which they are enabled to carry with them a supply of water, to keep their gills moist during their travel. Guided by some peculiar sense, they always travel in a straight line to the nearest water. They do without the memory, for it has been found that if a tub filled with water is sunk in the ground near one of the pools which they inhabit, they will, when the pool dries up, move directly toward the tub. Surely this is a wonderful and merciful provision for the preservation of these kind of fish; for, inhabiting as they do, only stagnant pools, and that too, in countries subject to long and periodical droughts, their species would, but for this provision, become extinct.

SECRETS OF MAGIC.

Robert Houdin concludes his memoirs with a chapter of Arab miracles, which he explained. The Aissaouna eat pounded glass. Houdin powdered some for himself and ate it, and he avers that his appetite for dinner was improved by the dose. They walk on red hot irons with their bare feet, and pass their tongues over white hot pieces of iron. Prof. Sementrici discovered that by rubbing into the skin a solution of alum evaporated to a spongy state, it was rendered insensible to the action of red-hot iron. He rubbed himself with soap, and found that even the hair did not burn. He rubbed the alumn with his tongue, and lapped the glowing metallic surface without pain.—Houdim himself tried passing his hands, slightly dampened, through a stream of melted iron, and found as others have done, that it left no scar on him. An English conjurer used to thrust a sword through his body, shove a knife up either nostril to the handle, and thus spitted sing a song. Houdin bought the secret of the invulnerable and now divulges it. The performer was very thin. With a waist-belt he strapped his tender paunch tight down upon the vertebral column, substituted a card-board stomach for the suppressed part, covered all over with flesh colored tights; between the true and false abdomen he fastened a scabbard, covered the apertures on the sides with rosettes, placed a sponge filled with a red liquid in the scabbard, and there thrust his sword, which came out covered with bogus blood, of course. The pug-nosed mountebank enjoyed a physical conformation, which permitted the delicate and delightful performance.

RESEARCHES ON SPOTS OF BLOOD.

DETERMINATION OF THEIR AGE, BY M. PFAFF. THEIR ORIGIN, BY M. ERPENBECK.

Blood spots, as every one knows, are of a beautiful red colour, becoming brown with time. The red colour begins to change from the second day, the spot becomes visibly brown by the third day, and after a few months it is black, with a slight yellowish tinge.

To these well known characteristics M. Pfaff adds others more precise, drawn from the action exercised on these spots by a solution of arsenious acid (containtaining one grain to two grains of water). The limit set by him is the time taken by the spot to become pale in this solvent, or until its edges are barely distinguishable from the surrounding substance.

When new they dissolve in a few minutes.

When from 1—2 days old, require	¼	hour to	dissolve.
" 3—8 " "	½—½		"
" 2—4 weeks "	1—2		"
" 4—6 months "	3—4		"
" One year and upwards	4—8		"

With the time taken in effecting the solution, the colour of the liquid obtained must be taken into consideration; the new spots giving a red solution, old ones a brown solution.

Chlorine may in this case be useful in the following manner:—

A spot four months old, for instance, requires to be left 3—4 hours in the arsenious liquid, to be reduced to a slight residue of fibrine, but with edges, still perfectly recognisable. By then leaving the spotted substance for an hour in chlorated water, the edges will become quite indstinct.

A spot six months old, having remained for hours in the arsenical liquid, requires two hours in the chlorated water to cause the edges to disappear.

Under the same condition, a spot eight months old requires three hours; a spot more than a year old requires more than five hours, and so on; the older the spots the longer time they require.

For determining the specific odour of blood, M Erpenbeck believes he can advantageously substitute heat for sulphuric acid; in operating with fresh blood, he lets a few drops fall into a test tube, and heats it by means of a very small flame. The odour is developed directly all humidity is dispelled, and before the blood begins to carbonise; it is very evident during cooling, and remains for several months in the sealed tube.

Dry blood he dissolves in water, or at least moistens it before exposing it to the action of heat.

NEW YORK, Jan. 10, 1865.

MR. EDITOR:—Sir—My attention having been called to the article in the last number of your valuable journal, headed "The discovery of Petroleum," and my views having been asked in regard to it by a number of my friends who are interested in this truly important matter, permit me to use your columns in replying to those enquiries, and also to the writer of the theories there set forth.

This whole subject is still, and must remain until further researches and developements have been made, one of theory. I having a theory of my own which I have not as yet seen advanced by any of the writers upon Petroleum, desire to place it before those who probably have more extended information than I have, that if wrong I may be corrected, and thereby mislead none who may require my professional services in the development of this valuuble oil.

Mr. Hubbel, sets forth two theories, to which I would again call the attention of your readers, and ask a comparison with mine, which is: That Petroleum IS A LOCAL DEPOSIT of vegetable oil, and only obtainable in, or below a certain strata of rock of a porous nature—that is to say in the strata of the Devonian sand-stone, and that where this strata crops out, there, and only there, may we expect to find it in the form of oil springs, or as Mr. Hubbel terms it, the oil seen upon the waters of the Pacific ocean and the open Polar sea discovered by Dr. Kane, and which forms the oleaginous food for whales; or, where by boring, we tap this strata, we may again expect to find and bring it to the surface by artesian wells.

That this oil, or Petroleum, is not formed by the decomposition of sea plants and a mixture of salt water in the Pacific ocean and filtered through this sand-stone, (although this may, to a limited extent, be one source of its supply,) but that it is a vegetable oil, produced from the decayed and decaying vegetable deposits of former ages, underlying this Devonian sand-stone by the internal or latent heat of the globe—that it is absorbed by, or filtered through this sand-stone and there deposited in the cells, or fissures of that strata, and that it is the basis, or carbonic principle of all coal formations—that coal having an excess of this oil, or in other words, nature not yet having perfected the transformation is more or less bituminous, and as this transformation progresses, and the oil becomes more solidified, the coal approaches to, and finally becomes athersite in its character—that this process must necessarily be slow, and upon the exhaustion of this vegetable deposit, if such a circumstance can arise, the supply of oil must entirely cease, I think all will admit, and upon this theory I account for the sudden, and as yet unexplained, stoppage of many of those wells which have heretofore flowed most abundantly, and that when nature has again filled the fountains from which they are supplied, like our ordinary wells and springs, they will again flow. But nature being progressive in her works, I hold that as age to age succeeds and strata upon strata is formed, so will vegetable and even animal matter be deposited, and thus a supply of the basis of this oil be kept up.

This, in brief, is the theory I wish to set forth and for which I would ask a candid comparison with those heretofore made public, that my views, if wrong may be corrected, and in the future discussion of the subject, all the light which science has thrown upon it may be brought out to enable us to proceed understandingly, and reduce our operations to a system.

CIVIL ENGINEER.

A vein of lead was recently discovered near Mineral Point, Wis., which in ten days yielded from 8 to 10 tons of lead.

AN IRON LETTER.

By the last American mail a letter, which is remarkable both as a documentary curiosity and as a specimen of manufacturing skill, was received by the Birmingham Journal. It is written on iron rolled so thin that the sheet is only twice the weight of a similar sheet of ordinary note paper. The letter is dated, 'South Pittsburg (Pensylvania), November 6th, 1864," and says:—"In the number of your paper, dated October 1st, 1864, there is an article setting forth that John Brown & Co, of the Atlas Works, Sheffield, had succeeded in rolling a plate of iron 13½ in. thick. I believe that to be the thickest plate ever rolled. I send you on this specimen of iron made at the Sligo Ironworks, Pittsburg, Pennsylvania, as the thinnest iron ever rolled in the world up to this time, which iron I challenge all England to surpass for strength and tenuity. This, I believe, will be the first iron letter that ever crossed the Atlantic ocean.—Yours, &c., John C. Evans." The iron is said to be of exceedingly find quality, and the sheet by far the thinest ever seen in this country. The letter will be deposited in the Museum of the Midland Institute. Tested by one of Holtzappfel's gauges, the thickness of the sheet is found to be one-thousandth part of an inch! A sheet of Belgian iron, supposed hitherto to be the thinest yet rolled, is the six hundred and sixty-sixth part of an inch thick and the thickness of an ordinary sheet of note paper is about the four-hundredth part of an inch.

MANTEL ORNAMENTS.—An acorn suspended by a piece of thread within half an inch of the surface of water in a hyacinth glass, will, in a few months, burst and throw a root down into the water, and shoot upwards its straight and tapering stem, with beautiful little green leaves. A young oak, growing in this way on the mantel-shelf of a room, is a very elegant and interesting object.

The ancient method of breaking rocks by fire has lately been revived at the Rammelsberg mine in the Hartz mountains. In a portable furnace about one and a half bushels of coke burn from 4 p. m. to 5 a. m., when the furnace is removed and the rock left to cool, after being sprinkled with water. About noon the face of the rock spontaneously detatches itself; and after that a further portion is broken.—The effect of the fire extends to 8 inches, and with 1 1-2 bushels of coke from 16 to 24 cwt. of ore is obtained at half the cost of the gunpowder process.

In the Norwegian mines a singular custom is observed in paying the weekly wages of the men. They all present themselves on Saturday evening to the inspector, who having settled accounts with each, bids him turn round, and writes in white chalk upon his black back the sum due to him. Thus numbered, the man goes to the cashier, who also turns him round to look at the figures, and pays him without having a word to say.

WEST VIRGINIA OIL ITEMS.—The Morgantown Post makes a vigorous blow over the oil indications thereabouts, and speaks of a Taylor farm, near the town, which is so greasy that if a hole be made in the ground a few inches deep, and a match applied, the gas will ignite and blaze to the height of a couple of feet. It exhorts oil men to come on. The Fairmont National says that the oil fever is very prevalent in Marion county; oil has not yet been actually struck, but pretty much all the territory is leased by enterprising speculators, and several wells are being sunk.

TIN IN NEW HAMPSHIRE.—Dr. C. T. Jackson, State Geologist of New Hampshire, reports the discovery of veins of tin ore, containing from 30 to 73 per ct. of tin. He considers it proven that miners can earn good wages in working it; and thinks there is a prospect of a productive industry from it.

THE MINING & PETROLEUM STANDARD AND AMERICAN GAS-LIGHT JOURNAL. is published at Tribune Buildings, No. 1 Spruce st. on the 2d and 16th of every month, and is a recognized official organ of—

LIGHT, HEAT, MINING INTERESTS.

PETROLEUM, WATER-SUPPLY, AND SCIENTIFIC SUBJECTS GENERALLY.

JAMES W. BRYANT, EDITOR AND PROPRIETOR.

W. S. SHERMAN, PUBLISHER.

PROF. C. ELTON BUCK, CONSULTING CHEMIST.

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AGENTS

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The Mining and Petroleum Standard

AND

AMERICAN GAS-LIGHT JOURNAL,

PUBLISHED ON 2D AND 16TH OF EVERY MONTH.

JAMES W. BRYANT, ... EDITOR.

MONDAY, JAN. 16, 1865.

BACK NUMBERS WANTED.—We want to complete our files of the Journal, the following numbers, for which we are willing to pay full price.

Vol. II—No.'s 13, 22, 21, 25, 29 and 34.

Vol. III—No.'s 40, 42, 44, 47, 48, 52 and 56.

Vol. IV—No.'s 63, 64, 67, 68, 69, 70, 72, 74, 80, 82, 83.

Vol. V.—No.'s 91, 93, 95 and 96.

Those of our subscribers who do not bind the Journal, would do us an especial favor by forwarding to us any of the above numbers. We are being constantly called upon to furnish back issues of our paper by those who value it for future reference, and we have supplied them until all of the above numbers are exhausted.

TO OUR SUBSCRIBERS.—There are a few of our subscribers who are in arrears for the current year, and to whom we have sent bills without any response, We request all who are indebted to us to remit the amount due, either in a Bank check to our order (payable anywhere), or in a post office order payable here, not having received several remittances made to us in money. And if any parties remit and do not receive acknowledgement of its receipt in due time we wish them to advise us.

WATER METER.—We call especial attention to the article headed "The Albany Water Meter," which we publish in our Water department of this issue The description of this invaluable invention is very graphic, and the tests that have been made are vouched for as being the most thorough. We hope that those having the management of the Water supply of our city will give this Meter its proper consideration, as it is of the utmost importance to all that some check should be put upon the regardles waste of water that is so prevalent.

During the past year a company has been engaged in putting a well down in Chicago in search of oil. The result was that they struck a subterranean lake of water at the depth of seven hundred and two feet The water has since been running over the top at the rate of four hundred gallons per minute.

PETROLEUM SPECULATIONS.

We have observed the immense movement in this new flood of wealth to our Country with dispassionate feelings, because we have not been engaged in any of the numerous enterprises which have been offered—but we have not been indifferent to the subject. Any source of wealth to a people, more especially that which comes from the earth and supplies real wants, could not but impress us, though it were less in importance than the magnitude which this Petroleum interest in fact is.

Not possessing a disposition for reckless speculations, and in fact being decidedly opposed to it, (rather "old fogy" perhaps,) we have seen with regret that the operations in this great tide of wealth have not been directed in channels of integrity for its full developement. We would that the capital invested in Petroleum companies had ALL been discreetly placed, to bring out to the fullest extent the riches which nature is so liberally bestowing upon us at a time when the Nation is requiring from its people "material aid" under the responsibilities which have crowded upon it.

We would not discourage investments of capital in Petroleum companies—far from it. The Petroleum interest is no "Tulip mania," nor "South sea bubble"—it is a reality—an IMMENSE reality, as we shall show by the statistics we will introduce, but we consider ourselves guardians of the public to a sufficient extent to advise them of the false beacons which are so brilliantly lighted by bogus companies to lure persons impelled by a greedy spirit of speculative gain, to rocks and shoals known only to unprincipled speculators—may we not justly say, swindlers.

There are many companies, a great many, who are known in the commercial community to be respectable and responsible. whose direction is in the hands of honorable men, but in the mania which has existed upon this subject, many parties are not satisfied with the truthful representations of such men, who only show probable results, but they rush headlong into those companies who hold out the fascinating promises and assurances of immense dividends and a consequent extravagant advance in the price of stocks. Vain illusion! An idle dream of wealth, from which too many will awake in disappointment. The greater number of such companies have never entertained the idea—not even the remotest hope of an expectation, that a dividend from actual profits would ever be made.

The Petroleum interests which have been developed already in this Country are stupendous, and yet, almost every day brings us information of further donations from our kind and generous mother earth. The late discovery at Fishkill with its peculiar and extravagant promise, has awakened the most sluggish, and there are some so sanguine in the mania that they would invest without hesitation, in a company to bore for oil in the Central Park!

The statistics which we append will astonish those who have not kept pace with the progress of the Petroleum business. We give an extract from the "World," which embodies all we could say, or state in this particular.

"There are now organized, that we know of, in the city of New York, one hundred and twelve oil companies, representing a capital of ONE HUNDRED AND THIRTY-FOUR MILLIONS FORTY FIVE THOUSAND DOLLARS! The city of Philadelphia has a capital representation of one hundred and sixty-three millions seven hundred and fifteen thousand dollars. We append a tabular statement of the amount of capital represented in the Petroleum business of ten cities of the North, as follows:

Philadelphia, ...	$163,715,000
New York, ...	134,045,000
Pittsburgh, ...	15,740,000
Boston, ...	2,300,000
Baltimore, ...	1,750,000
Titusville, ...	4,000,000
Cleveland, ...	2,200,000
Chicago, ...	1,000,000
Cincinnati, ...	750,000
Washington, ...	700,000
Total, ...	$326,100,000

Besides the above there are several oil companies in New York, Philadelphia, and in other places, the amount of capital represented therein not being public; and many private enterprises, not stocked, representing an additional capital of one hundred millions at the lowest figure."

Such an immense property coming from the earth with little comparative expense, must yield fabulous profits to those who possess it, but the outside Petroleum companies are—outside. We recommend caution, without intending by any remarks we have made to discourage judicious investments in such desirable opportunities as exist.

WHAT THE OIL LANDS ON OIL CREEK ARE WORTH.—The value of the soil alone bordering on Oil Creek say two miles on each side, and extending from its mouth to Titusville, about twenty miles, is estimated to be worth in the market at this time—if it could be purchased at all—two hundred and fifty millions of dollars. Two thousand dollars were considered a large sum four years ago for a farm three to four hundred acres. These farms have been sold at from six hundred thousand to one million of dollars each; the parties who now own them. principally joint stock companies, of course hold them at a much higher figure. So says the Venango Spectator.

BITUMENIZED PAPER PIPES FOR WATER.—The Practical Mechanics' Journal says that these pipes are strong, durable, not conductors of heat, and therefore not readily frozen up, inoxidable and nearly incorrodible; so far elastic as to bend where iron would break; so light that their transportation costs a fourth as much as iron; and their cost is half as much as cast-iron in England. While the duty on pig-iron is $9 per ton, it may be well to consider about bitumenized paper for pipes; and, further, to try whether our cheap material, wood, may not be bitumenized and made useful for pipes.

THE FIRST OIL MAN STILL POOR.—It may be interesting to those of our citizens who have been so fortunate in oil speculations, who have not even seen the oil regions, to know that the first man who sank a well lives near the spot and is still poor. So says a correspondent of the New York Times. He says Col. Drake sunk a well less than 100 feet in 1859, and was the first man to strike oil. This was on the Watson Flats below Titusville. He reaped no advantages from his discovery and still lives on the creek as poor as when he bored that well, while others have made millions by pursuing the path in which he led. It is the fate of discoverers and inventors to die poor.

PETROLEUM IN NEVADA.—The Humboldt Register thinks that that section of Nevada is destined to become one of the greatest petroleum producing regions in the world. There is a large region of country that seems to be completely saturated with petroleum; the liquid streams spontaneously flow through the surface, and rises wherever a hole is dug and coal gas rises everywhere. There are also a large number of springs, from which the natural crude oil flows in abundance, and one discharges more than a barrel a day.

FRENCH MINES.—France works 400 coal mines, 202 iron mines, and 207 mines of other substances.

CROCKER'S OIL EJECTOR.

This arrangement called in common parlance a "blower" is rapidly working an entire revolution in the operation of pumping wells, and its introduction into general use must add greatly to the aggregate production of oil. We noticed last summer its application to the Empire well, with excellent results. Since that time it has grown rapidly into favor, and it is the opinion of our best oil men that it will in a year entirely supercede the use of the lifting pump. The "blower" as now in use, consists of a large tube open at the lower end and reaching to the bottom of the well, with a smaller pipe extending by its side. The smaller pipe is turned up at the lower end and projects inside the discharge pipe about four feet. The turned-up end of the ejecting pipe terminates in a hollow brass truncated cone, corresponding with which, with an intervening space of about three-sixteenths of an inch, is a conical contraction in the surrounding discharge pipe. Air is forced by a condenser down through the small pipe, and oil or any liquid in the well is forced up through the discharge pipe. In addition to its direct action in forcing out the oil, the apparatus possesses an important additional advantage. It is well known that the sudden compression of air raises its temperature. The action has this effect, and the air is forced into the well at temperature sufficiently high to prevent the accumulation of paraffine in the pipe. Should sediment of any kind accumulate, steam may be turned into the small pipe, and the tube quickly cleared. The whole apparatus is so compact, strong and simple in its construction, and so certain in its operation, that it cannot fail to rapidly supplant the old method of raising oil, with its ponderous walking-beam, and rotting and breaking sucker-rods.

Several modifications of the Crocker Ejector have been attempted, but his claim is so broad that it seems to cover the whole ground.—*The (Titusville) Petroleum Reporter, Dec.* 2.

IMPORTANT NOTICE.

To Advertisers.—Our paper offers a superior medium as an advertising agent, to all those who manufacture or sell machinery or appliances of any kind for Gas, Mining, Water, Sewerage, the production or purification of Oils, &c. &c., not so much on account of a wide-spread circulation, as from the fact that it goes directly to the hands of those who are constantly using and requiring machines and improvements for these branches, and who look hrough our columns for information where to procure them. The class of people who read our paper not only peruse our pages of reading matter, but read the advertisements as well, for the reason that they are directly interested in all things pertaining to their business. We therefore ask, with confidence that we can do them justice, all parties having machinery or improvements of any kind for either of the objects to which our paper is devoted, to send in their advertisements and avail themselves of these advantages. It will be observed that our terms for advertisers are very reasonable.

NEW YORK MINING EXCHANGE.

New York, Jan. 16, 1865.

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Copper Stocks.			***Gold Stocks.***		
Aztec	7⅛	9	Benton	1	1¼
Bedford	1	1⅛	Consol'd Gregory	25	28¾
Boston	4⅛	5¾	Corydon	—	3
Caledonia, A. P.	10	12	Gunnel	3¾	4⅝
Canada	3¾	4	Great Western	—	8
Carp Lake	3	5	Hope	—	9
Central	65	70	Isaac's Harbor	¾	⅞
Columbian	—	24	Manhattan	—	9
Copper Falls	84⅛	88	Mariposa	44	44¾
Clifton	—	$1	Montana	½	1
Dacotah	—	5½	New York	2½	3
Derby	⅞	1⅛	N. Y. & Nova Scotia	⅝	1¼
Douglass	—	—	Quartz Hill	9¼	10
Evergreen	18¾	20	Quicksilver M'g Co	81	82
Flint Steel River	12	13½	Rocky Mountain	—	10⅜
Frue	2¾	5	Smith & Parmelee	7	12
Grand Portage	—	—	***Coal Stocks.***		
Hancock	12¾	14	American	98	100
Hamilton	—	6	Ashburton	—	25
Hilton	5	6	Central	62	65
Hudson	1	2	Cumberland	61	62
Huron	32	33	Del & Hud. Canal	206	208
Indiana	8¾	9¼	*Hampshire & Balt.	104	110
Isle Royale	20	20⅜	Pennsylvania	213	215
Keweenaw	—	6	***Lead Stocks.***		
Knowlton	7	10	Bucks County	⅝	⅞
Lafayette	1	2	Clute	1½	1⅝
Manhattan	—	—	Erie	—	20
Mendota	—	—	Macomb	3⅛	5
Merrimac	4¾	5¾	Plancentia Bay	1⅛	1⅜
Minnesota	33	37	Sussex	⅜	⅞
New York, A. P.	2	3½	Wallkill	3½	6
N. J. Consolidated	4	4⅜	***Iron Stocks.***		
Norwich	—	6	Copake	8	10
Ogima	5	6¾	French Creek	⅝	1
Ontonagon	3	4⅛	Teal Lake	4½	6
Penn	—	11½	***Miscellaneous.***		
Providence	1⅛	2	Rutland Marble	17	20
Quincy	96⅝	98	*Ex. div.		
Reliance	1⅛	2¼			
Rockland	12⅛	14			
Superior	8⅛	9			
Sharon Consolidated	—	3			

Cooking without Fire.—M. Babinet, of the French Institute, has laid before the Academy the result of his experiments in this direction. His recipe is:—Place your food in a black pot, cover it with a pane of glass, and stand it in the sun. The water soon boils, and the food is said to be of better flavor than if cooked in the ordinary way.

Mr. Barker, organ-builder, Paris, is said to be the inventor of a mode of applying electricity in the construction of great organs, so that the largest organ may be played as easily as the piano, and the pipes may be distributed anywhere through a church. This invention is now being applied to a great organ in course of construction for the church of St. Augustin, in Paris.

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The lands of these companies are located on the Alleghany River, and on Hemlock Porcupine and McCrea Creeks, making an oil boring territory of over ten and a half miles in extent.
The wells on the adjoining property, known as the "Celebrated Heldricks" wells, and "Pithole Creek" wells, are famous for their immense supply of oil.
The wells on this property are being sunk with great vigor, and promise large supplies of oil.
To the capitalist and to the parties of limited means unsurpassed inducements are offered. Persons investing in this Company get $5 stock and the above Bonus for each $1 invested, without further call or assessment.
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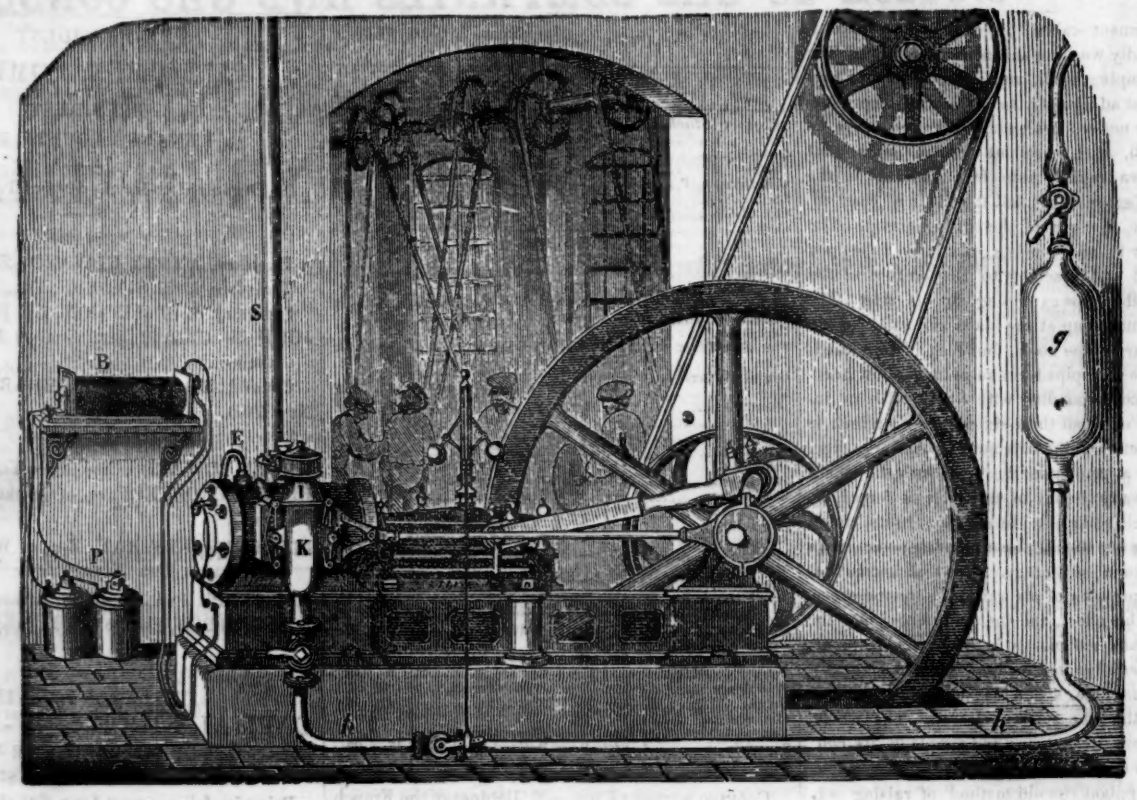


MOTEUR—LENOIR.

LENOIR GAS ENGINE.

This is a horizontal engine, in which a piston, by a connecting rod drives a horizontal shaft.

The gas enters by the pipe "h" from the regulating reservoir "g," (made of vulcanized india rubber,) which regulates the feeding and the branches connected with the gas-pipe.

The tube, K, receives the gas conveyed by the pipe "h," and conducts it to the valve, which opens and closes alternately, by means of a rod moved by an eccentric wheel fastened to the end ot the shaft.

Two of Bunsen's piles, P, sufficient to produce the electricity are placed at a little distance from, and in communication with a Ruhmkorff electric apparatus, B. The electric current of this apparatus is conducted by means of insulated wires to the electricity distributor "m," placed on the front of the frame, while the current of electricity and its arrival at the inflammator, inserted at each end of the cylinder, is directed by the movement of the piston-rod, which, by an ingenious combination, impels a small movable slide before the distributor.

The burnt gas, after having performed its functions in the machine, escapes, by means of a valve, through a pipe, S, and the water designed to cool the interior of the cylinder enters through a double passage, by means of a pipe situated near the escape-valve, and goes out by the pipe, E.

A two horse and a half horse Engine are now in practical operation at the Dry Dock Iron Works, No. 345 East Fourth street, near East River, New York, where they are being manufactured, and those interested are invited to call and examine them.

THE LENOIR GAS ENGINE

Requires no Fire and makes no Smoke,

No Noise, no Dirt, and is thoroughly safe.

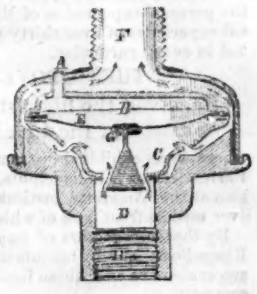
It is propelled by the expansion of Air, dilated by the combustion of Gas within the cylinder, ignited by the

ELECTRIC SPARK.

NOTICE TO GAS COMPANIES AND GAS CONSUMERS.

THOMPSON'S PATENT GAS CONTROLLER,

The only Self-Acting Gas Controller, Regulator, and Burner Combined which has ever been invented, or known to science.



THE PRINCIPLE UPON WHICH THE THOMPSON'S AUTOMATIC GAS CONTROLLER works is one well known to mechanics, and is simple in its operation.

Within the circumference of a small cylinder below the burner is placed a conical valve attached to a movable diaphragm. The diaphragm rises or falls as the pressure of gas from the pipe is lesser or greater, and the valve acts upon the valve-seat with such regularity of movement that in a difference of from five-tenths of an inch pressure to five inches the variation in flame is hardly perceptible.

The simplicity of its machinery and the nature of the material used in its construction insure its regular action and durability.

In consequence of the uniform quantity of gas which passes the Controller to the burner, there is no waste, and a steady, soft flame is produced, which is important to all who read, write, or work by gas-light. The unsteady flickering blaze which invariably exists when the pressure of gas is beyond the requisition for consumption, has injured the sight of thousands who have been subjected to it.

For street lamps these Controllers are especially valuable, because the pressure varies materially during the night, and in consequence there is a waste of gas, and the light variable.

Improvements have lately been made in the mechanism of the Controller which makes them almost a perfect meter to each burner, and they are now offered to the public with more confidence than ever before.

Reference is permitted to the following named gentlemen—

Col. CHAS. ROOME, President Manhattan Gas Company, N. Y.
C. H. SANDS, Esq., President Metropolitan Gas Company, "
J. H. ADAM, Esq., President New York Gas Company, "
PETER COOPER, Esq., Cooper Institute, "
JOHN A. DUFF, Esq., Olympic Theatre, "
GEO. H. KITCHEN, Inspector of Gas Meters, N. Y.
A. L. BOGART, Esq., Gas Engineer.
Col. J. A. SABATTON, Engineer Manhattan Gas Company.
Col. A. J. WHITE, Engineer Metropolitan Gas Company.
J. K. SIMPSON, Esq., Engineer Cooper Institute.

Persons interested are invited to call at the manufactory, 52 Greene street, where they can see the operation by pressure guage and test meters.

M. L. CALLENDAR, Agent
Office, 52 GREENE STREET.

THE AMERICAN METER CO.,

Organized under the General Manufacturing Laws of the State of New York.

SAMUEL DOWN, PRESIDENT. HENRY CARTWRIGHT, VICE PRESIDENT. RICHARD MERRIFIELD, SECRETARY AND TREASURER.

TRUSTEES.

SAMUEL DOWN, WILLIAM HOPPER, R. H. GRATZ, HENRY CARTWRIGHT, RICHARD MERRIFIELD.
THOMAS C. HOPPER, *Superintendent at Philadelphia.*

This Company is now prepared to furnish WET AND DRY GAS METERS, STATION METERS, GOVERNORS, PRESSURE INDICATORS & REGISTERS, SERVICE and METER COCKS, and all other articles in their line appertaining to the use of Gas-Works.

The combination of Mechanical and Scientific Skill, and the long experience of the several members of the Company, is a sure guarantee of durability, acur acy and excellence of workmanship. Orders addressed

AMERICAN METER COMPANY,

512 WEST TWENTY-SECOND STREET, NEW YORK,
ARCH AND TWENTY-SECOND STREETS, PHILADELPHIA,
1 BARRETT STREET, BOSTON, will meet with prompt attention.

HARRIS & BROTHER,
PRACTICAL GAS METER MANUFACTURERS

Continue, as heretofore, at their old Establishment,

No. 1117 CHERRY ST., PHILADELPHIA,

TO MANUFACTURE

WET AND DRY GAS METERS and all kinds of GAS APPARATUS, and furnish all articles appertaining to the use of Gas Works.
OUR WORK WARRANTED—Satisfaction Guaranteed. Orders respectfully solicited, and promptly attended to, by—

HARRIS & BRO.
No. 1117 Cherry st., Phila.

GEO. H. KITCHEN & CO.,
NEW PATENT
GAS APPARATUS
For Country Residences, Public Buildings, &c.,
FROM $300 UPWARDS.
EVERY DESCRIPTION OF GAS FIXTURES.
Gas Fitting in all its branches.
561 Broadway,
NEW YORK.

WORTHINGTON'S STEAM PUMPS, extensively used by Gas-Light Companies. For Sale at greatly Reduced Prices.

Also, a new and highly successful Pump, driven by water pressure, requiring no attention or repairs, and the most economical water motor yet constructed.

Patent GATES, for Water and Steam-stops.
HENRY R. WORTHINGTON,
61 Beekman street, N. Y.

GLYCERIN
FOR
Filling Wet Gas-Meters,
Cheaper than Whisky or any other substance.

We have furnished the Cincinnati Gas and Coke Company 300 barrels Glycerin, for filling their wet meters, and are now ready to supply other Gas Companies at the lowest cash prices.

We warrant our Glycerin not to corrode the meter metal, nor to freeze at the lowest ordinary temperature, nor to evaporate.

HARTMAN & LAIST,
Manufacturing Chemists,
Cincinnati, O.
Office 64 Sycamore.
Agent in New York, Paul Balluff, 95 Maiden Lan

WOODEN PURIFYING TRAYS.

PATENT
Conically Slotted Solid Wood Sieves
FOR GAS PURIFIERS.
CAUTION
TO
GAS MANUFACTURERS.

The Conically Slotted Solid Wood Tray wa patented 21st October, 1862, by N. O. hurst, assignee of Wm. Combe and a pers are cautioned against purchasing such trays fi G. Hunt, or any other person except the subscr ber, as it is a direct infringement of said pate The following companies are now using the trays.

Manhattan, New York,
Williamsburgh,
Brooklyn,
Albany,
Baltimore,
Philadelphia,
Chicago,
Louisville, Glumere, and n

Orders received by mail or otherwi
JOH
347 Ave. C, New Y

GROVESTEEN & CO.,

PIANO-FORTE MANUFACTURERS.

499 BROADWAY, NEW YORK.

The attention of the public and the trade is invited to our New Scale Seven Octave Rosewood Piano-Fortes, which for volume and purity of tone are unrivalled by any hitherto offered in this market. They contain all the modern improvements, French, grand action, harp pedal, iron frame, over-strung bass, etc., and each instrument being made under the personal supervision of Mr. J. H. Grovesteen, who has had a practical experience of over thirty years in their manufacture, is fully warranted in every particular.

THE "GROVESTEEN PIANO-FORTE"

Received the highest award of merit over all others at the Celebrated World's Fair!

where were exhibited instruments from the best makers of London, Paris, Germany, Philadelphia, Baltimore, Boston, and New York; and also at the American Institute for five successive years, the gold and silver medals from both of which can be seen at our warerooms.

By the introduction of improvements we make a still more perfect Piano-Forte, and by manufacturing largely, with a strictly cash system, are enabled to offer these instruments at a price which will preclude all competition.

PRICES.

No. 1, Seven Octave, round corners, Rosewood Plain Case, $275.
No. 2, Seven Octave, round corners, Rosewood Heavy Moulding, $300
No. 3, Seven Octave, round corners, Rosewood Louis XIV. style $325, a fac-simile of the accompaning cut.

TERMS—NET CASH, IN CURRENT FUNDS. Descriptive Circular sent free.

WEST'S IMPROVED PUMP.

Anti-Freezing, Double-Acting, Forcing, and Lifting.

These Pumps have now been in general use a number of years, and give better satisfaction than any other, and are recommended as

THE BEST!

by CAPTAIN ERICSSON and other eminent engineers. We can refer to thousands using them, and guarantee that all will recommend them. They are more simple in construction, and work easier and cost less than all others.

"Our readers will find the double acting, improved pump of J. D. West & Co., one of the best in the market. It is very simple, works to a charm, so that any child may use it; throws a steady continuous stream, and does not freeze in the coldest exposures, and is unusually cheap. We say this knowingly, and give the testimony of our own accord, without the knowledge or request of the proprietors."—*New York Evening Post, July 1st*, 1863.

"J. D. WEST & Co.: We are pleased to state that the Pumps we had of you about a year ago, have been in constant use, twelve hours each day, and raise for the use of our woolen factory, about 180 gallons per minute. They work with but little power, compared with pumps we have used before, and do not get out of repair, and are satisfactory in all respects.

"DUNLAP MANUFACTURING CO."

Solon Robinson to the Farmers' Club.

Jan. 23.

"No farmer who owns a well or cistern can possibly afford to be without an iron pump. It should be a once a suction and force pump—a perfect little fire engine—such a one known as 'West's Improved Pump.' I speak of this Pump because I happen to know it.... to be very simple, durable, powerful and cheap, and it don't freeze up, nor get out of order once a year.... I know this, and think I may be doing the farmers good by speaking of it.... A boy ten years old can work it, and throw a continuous inch-and-a-quarter stream.... It can be made to work in deep wells as well as in shallow ones."

"GREAT NECK, L. I., 1860.

"I have used this Pump for one summer and winter' exposed to the northwest wind coming over Long Island Sound, being the coldest possible exposure, and at no time did it freeze, nor were we unable at any time to pump water with great ease.

H. B. MC ILVAIN."

"The undersigned having to use "West's Improved Pumps," cheerfully recommend them as simple, durable, and powerful in raising and throwing water, and for their ease of action, security against frost, and low price, we believe them superior to all others.

"WARREN LELAND, Met. Hotel, N. Y.
"J. W. POMEROY, Yonkers, N. Y.
"JOHN MESSEREAU, N. Y.
"DOMINICK LAWRENCE, Westchester."

From the New York Observer.

"We have had in use for months past one of West's Pumps, which has given us more satisfaction as a force and lifting pump than any we have ever used. It is one of great power, and well adapted for ship's decks, mines, factories, greenhouses, graperies, etc. *The Mining Chronicle and Railway Journal* says: 'It is recommended for its extreme simplicity of construction, great strength, and consequent durability and cheapness of repair. There is no stuffing-box—the pressure being held by a cup packing, like that upon the working-piston, working in a cylinder, fitted for the purpose within the upper air chamber—which we think a great improvement, as stuffing is so liable to be deranged and leak under strong pressure, to say nothing of the loss by friction incident thereto. It has also two air-chambers; thus the action of the valve is cushioned upon both sides by air—preventing water-hammer and vacuum-thump. The valves are very accessible and simply and cheaply repaired. They work much easier than any pump we have ever seen; the 4-inch cylinder being worked by children in wells 100 feet deep, and as they are extremely cheap, as well as simple and strong, we freely recommend them.'"

"CAMBRIDGE MINE, N. C., June 15, 1863.

"J. D. WEST & Co.—Gents: The Pump which I ordered for our mine is received, and put to work in our underlay shaft, which we are sinking. We find that one man will, with ease, lift 50 gallons per minute. We lifted in three and a half hours all the water in the shaft, which measures seven by twelve feet and thirty feet deep, and it was full when we commenced. It answers our expectations in every respect, and our workmen are highly pleased with it. It will do great service with but trifling expense for repairs.

"Yours, respectfully, BURR HIGGINS."

"This may certify, that I have been using, at my manufactory, for the last four years, 'West's Improved Pumps.' I now have in use three of said Pumps, one of which is kept constantly at work, 24 hours of each day (save Sundays), and has been running for the past two years. I pronounce them, unhesitatingly, the best Pumps that have been brought to my notice, having used many others previously. They are simple in their construction, and not easily disarranged.

"N. Y., Oct. 10, 1859. JAS. A. WEBB."

We have plenty more such certificates, but think these are enough. For Pumps, Hose, Pipe, etc., address or call upon

J. D. WEST & CO., 179 Broadway, New York.

Orders may be sent through the AMERICAN ADVERTISING AGENCY, 389 Broadway.

LILLIE'S

CELEBRATED

Chilled and Wrought Iron Safes,

WROUGHT IRON FIRE-PROOFS,

LOCKS AND VAULT DOORS.

These Fire-Proofs are manufactured to supply a demand for Security Against Fire, less expensive than my celebrated and superior Chilled and Wrought Iron Burglar and Fire-Proof Safes.

They furnish similar and equal security to the Safes generally manufactured in the different cities, but are SUPERIOR to them in their Fire-Proof qualities and durability, the iron being effectually protected from rust in any climate, and the Fire-proof not subject to lose its utility by age. This is an important advantage gained to the purchaser, as Safes often rust out and become worthless in two or three years.

To substantiate my position, those purchasing these Fire-Proofs are at liberty, by giving me due notice of time and place of trial, to test them by fire with any other Safe of the same size; and should they not prove superior, I will refund the money, or a new Fire-Proof, as the purchaser may decide.

LIST OF SIZES & PRICES OF WROUGHT IRON FIRE-PROOFS

	Outside.			Inside.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
6	40	31	27	31	21	15	$150
5	34	21	26	24	21	14	125
4	31	27	25	22	18	13	110
3	30	24	24	21	15	12	100
2	28	22	23	20	14	12	75
1	24	19	20	17	11	10	50

Sample of Fire-Proof Safe at Office of the Am. Ad. Agency, 389 Broadway, N. Y.

PRICE LIST.

LILLIE'S CELEBRATED CHILLED & WROUGHT IRON SAFES.

BANK, FIRE, AND BURGLAR SAFES.
Folding Doors, D Lock.

OUTSIDE.				INSIDE.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
	In.	In.	In.	In.	In.	In.	
1	66	30	29	54½	39	18	$950
1½	59	50	26	48	39	15	800
2	53	44	27	42½	33	15	600

MERCANTILE F AND B SAFES.
Folding Doors and Monitor Locks.

3	50	42	27	40	32	16	$500
4	46	42	27	36	32	16	450
4½	38	46	27	28	36	16	450
5	42	38	27	31½	27½	15	350

Single Doors and M. Lock.

6	38	35	26	27½	23½	15	$250
7	34	31	26	24	21	14	200
8	31	28	24	21	18	13	175
9	30	24	24	21	15	12	140
10	26	22	22	19½	13½	12	120
11	24	20	18	17	17	10	100

HOUSE SAFES.

SIDE BOARD	$600
DINING ROOM	350
PANTRY (No. 1)	275
PANTRY (No. 2)	150
DUODECAGON BANK LOCK	100
MONITOR SAFE do.	50
SAFE do.	10

NATIONAL BANK SAFES,
With 2 Inside Burglars and 1 D and 2 M Locks.

OUTSIDE.				INSIDE.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
	In.	In.	In.	In.	In.	In.	
1	68	53	35	55	39	18	$1,200
2	61	58	35	48	39	18	1,050
3	57	47	33	42½	33	18	900

BANK VAULT BURGLAR SAFES,
With Folding Doors and D Lock.

0	68	53	27	64	48	20	$1,000
0½	61	53	27	55	46	20	800
1	57	47	27	49	40	20	600

BANK VAULT BURGLAR SAFES,
Single Doors and D Lock.

2	53	32	26	49	28	19	
3	42	36	22	38	32	18	400
4	36	31	20	32	27	16	50
5	30	24	18	26	20	14	?

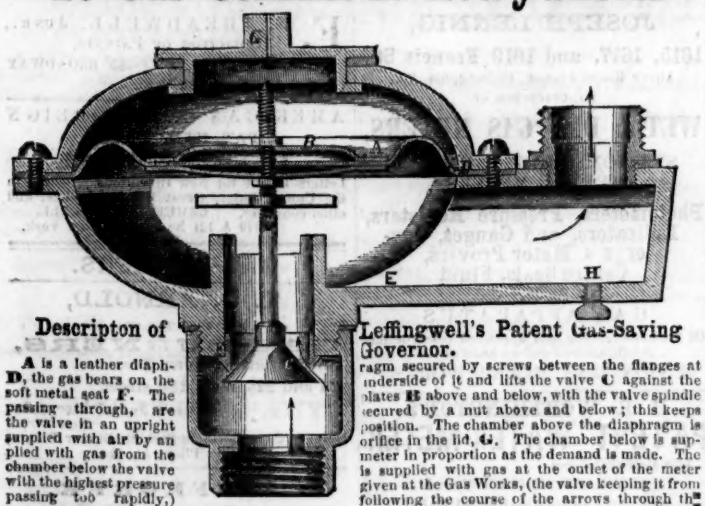
BANK VAULT DOORS AND FRAMES,
D and S Lock.

No.	Height clear.	Width clear.	Depth adjustable.	Price.	Weight.
	In.	In.	In.		
1	72	27	20	$400	3,000
2	72	27	20	275	1,500

Orders received and filled at net cash prices, by the AMERICAN ADVERTISING AGENCY, 389 Broadway, New York. All Safes shipped from Troy free of cartage.

Business Depart., E. ALVORD. *Corresponding Depart.*, FOWLER AND WELLS.

To Gas Consumers Everywhere.



Descripton of Leffingwell's Patent Gas-Saving Governor.

A is a leather diaphragm secured by screws between the flanges at D, the gas bears on the underside of it and lifts the valve C against the soft metal seat F. The plates B above and below, with the valve spindle passing through, are secured by a nut above and below; this keeps the valve in an upright position. The chamber above the diaphragm is supplied with air by an orifice in the lid, G. The chamber below is supplied with gas at the outlet of the meter plied with gas from the chamber below the valve given at the Gas Works, (the valve keeping it from with the highest pressure following the course of the arrows through the passing too rapidly,) governor to the o t where the distribution pipe is connected. E is a chamber to catch the rip, H is the o tlet said chamber, at which point, if the drip troubles its action, a syphon it ttached which c off.

STURGES & FROST, (MANUFACTURERS AND PROPRIETORS FOR THE UNITED STATES OF LEFFINGWELL'S PATENT GAS-SAVING GOVERNOR,) solicit attention to the above instrumen which the cut represents. It will positively lessen your gas consumption **15 to 40 per cent** without diminishing, but greatly improving, the light, which is done entirely on scientific principles easily comprehended.

The above facts are demonstrated by thousands of consumers who have them in practical operation in different parts of the Union. By sending two three cent postage stamps to the proprietors, No. 9 Mechanic Street, Newark, N. J., the GAS CONSUMERS MANUAL will be sent, containing price of the above Governor, full information with regard to the waste of gas, its causes and how remedied, an almanac for the years of 1864-5-6 and 7; also, a diary suitable for any year, together with certificates and references of many who have the Governors in use.

Try it by all means, it will not fail you.

Each Governor is Warranted Perfect.

STURGES & FROST.

☞ As no QUICKSILVER is used, Gas Companies will find it to their interest to favor its adoption among their consumers.

PRINCE'S METALLIC PAINT,

AN INDESTRUCTIBLE COATING FOR

IRON, TIN, and WOOD.

It consists of seventy-two parts Oxide of Iron, and twenty-eight parts Cement Lime Stone in the one hundred pounds.

It has much more body than red or white lead. It is warranted perfectly water and fire-proof and to withstand a greater heat on metals, without scaling, than any other paint in use.

It is a perfect cover for all kinds of iron, tin, or wood-work, out-houses, and canvas coverings. prevents and arrests the corrosion of metals, and is not affected by the action of salt, gases, acids or ammonia.

It hardens under water, as has been fully demonstrated by its application to gas-holders, by many of the largest gas companies in the United States; which companies having thoroughly tested its properties as herein claimed, pronounce in its favor over any other paints in the market, even though sold at double its price.

As a coating for patterns of iron or wood, when mixed with shellac, it is much superior to beeswax, oil, or shellac alone, as has been proven at the large founderies in the country.

For patching boilers and making joints, it is considered superior to red lead, or any other preparation.

For cleaning metals it takes the place of crocus, rouge, and emery, being better and cheaper.

This Paint requires no more oil than dry lead or zinc, and much less than the ordinary mineral paints. It is free from any waste, and possesses a spreading and covering power unequaled.

Terms, by the Barrel or Half Barrel, Five Cents per Pound.

A liberal discount made to parties purchasing by the ton.

A Barrel or Ton will be forwarded to any gas companies desirous of testing its qualities, for which there will be no charge if it does not give entire satisfaction as being the cheapest and most durable of all other Paints in the market.

Also, Prince's Imperial Black Paint, and Prince's Protoxide of Iron.

DANIEL SLOAN, General Agent,
115 LIBERTY STREET, NEW YORK.

Local Agent—CALVIN GAY, 29 Doane st., Boston.

THE
STANDARD
Gold Company
OF COLORADO.

DIRECTORS,
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EDWARD WILLIS,
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S. A. BANKS,
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President, ROBERT BOWNE.
Secretary, F. A. MITCHEL.

MINES on FISK LODE,
BOBTAIL LODE,
GROUND HOG LODE,
ENTERPRISE LODE,
and others,

In all, 8,625 feet (linear), and large water powers and mill sites.

Capital issued, 40,000 shares, at $10 per share.

A limited number of shares are offered at the low SUBSCRIPTION PRICE (having been reserved for their customers), by

WILLIAMS & MITCHEL, 12 Wall Street.

SAFEST AND CHEAPEST SYSTEM OF INSURANCE.

WASHINGTON
INSURANCE COMPANY
172 BROADWAY,

Cor. Maiden Lane, NEW YORK.

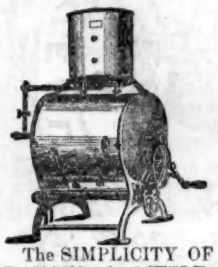
CASH CAPITAL, - - -	$400,000.
Assets, June 1, 1864, - - -	600,000.
Scrip Dividend, 1863, - -	60 per Cent.
Scrip Dividend, 1862, - -	60 per Cent.
Scrip Dividend, 1861, - -	60 per Cent.

The Policies entitled to participate receive 75 per cent. of net Profits.

Insures Buildings, Merchandize, Furniture, Rents, Leases, against loss or damage by FIRE, and MARINE RISKS on LAKES, RIVERS and CANALS.

GEO. C. SATTERLEE, President.
HENRY WESTON, Vice Prest.
WM. K. LOTHROP, Secretary.
WM. A. SCOTT, Ass't Secretary.

DRAKE'S
PATENT
AUTOMATIC GAS MACHINE.



THIS MACHINE, which has been in constant use for more than two years, is now acknowledged to be the

Most Convenient, Simple, and Efficient Method

OF LIGHTING BUILDINGS OF ALL KINDS, out of the reach of regular gas-works, ever brought to public notice.

The SIMPLICITY OF THE APPARATUS, its ENTIRE FREEDOM FROM DANGER, the LITTLE ATTENTION REQUIRED, the EASE WITH WHICH IT IS MANAGED, and THE CHEAPNESS and SUPERIORITY OF THE LIGHT, has gained for it the favorable opinion of those acquainted with its merits.

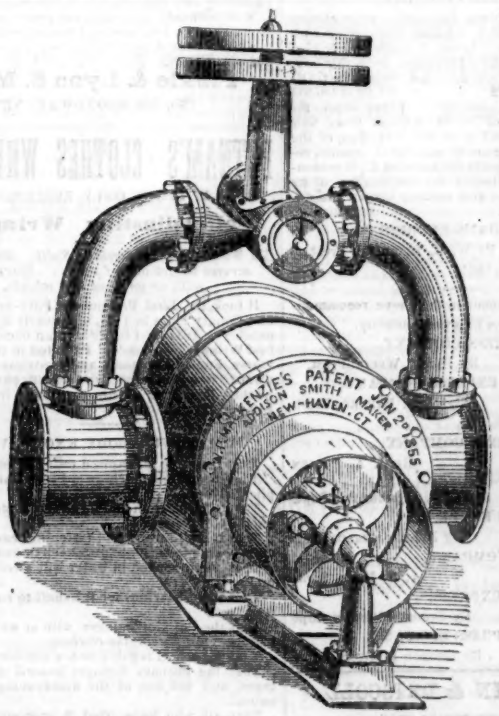
The Machine takes up but little room; no disagreeable odor is experienced in its use; no fire is applied to the apparatus at all; it can be attached to ordinary gas-pipes used for coal-gas, and is burned through the same kind of fixtures.

These Machines are manufactured in Boston, by the AU OMATIC GAS-MACHINE CO., and are for sale at their Store, 78 Washington s eet, Boston, and also at the Agency, MITCHELL, VANCE & CO.'s, No. 620 Broadway, New York.

For further particulars, address—

MITCHELL, VANCE & CO.,
620 BROADWAY, NEW YORK CITY.

SMITH & SAYRE,
Sole Proprietors and Manufacturers of
THE MACKENZIE PATENT GAS EXHAUSTER AND COMPENSATOR.



They are made to pass from 4,000 to 150,000 cubic feet of gas per hour; will increase the pro tion and illuminating power of the gas, and add very much to the durability of the retorts, el clay or iron. The Compensator obviates entirely the necessity of water-joints, is compact, dur a cleanly, not liable to get out of order, self-acting, quiet, and certain in its operation.

We are also sole proprietors and manufacturers of the

MACKENZIE PATENT BLOWER, PATENT CUPOLA AND SMELTING FURNACE.

The Blower is a Force Blast machine, durably built, and can be driven with one-third the power required to drive the ordinary Fan. The Cupolas are manufactured in sizes to melt from 1 ton to 20 tons per hour, will save one quarter of the time required by the old style Cupola, and 33 per cent. uel. Address SMITH & SAYRE, 458 Broadway, New York.

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BANKERS
AND
STOCK BROKERS,
49 Exchange Place
NEW YORK.

G. B. SATTERLEE, H. TRACY ARNOLD,
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Mining Stocks bought and sold at the Regular, Mining, Boston and Philadelphia Boards.

ALBERT H. NICOLAY,
STOCK BROKER AND
AUCTIONEER.
No. 52 William Street,
NEAR WALL ST., NEW YORK.
Special attention given to the Buying and Selling of Gas-Light Companies' Stocks.

PARTICIPATION.
ÆTNA FIRE INS.
COMPANY OF NEW YORK,
No. 170 Broadway.

CASH CAPITAL,	CHARTERED
$200,000.	1834.

The insured receive seventy-five per cent. of the net profits annually, without incurring any liability. When preferred, a discount will be made in lieu of participation in profits.

Scrip Dividend of 1861, - - 50 per cent.
Scrip Dividend of 1862, - - 50 per cent.
Scrip Dividend of 1863, - - 50 per cent.

JACOB BROUWER, *President.*
H. C. BEACH, *Secretary.*
WM. M. BARBOUR, *Asst. Sec.*

Carrington & Co.'s

GENERAL

PURCHASING AGENCY,

In Connection with all the Expresses,

No. 40 Broadway,

NEW YORK.

Established 1854.

Purchases to order ANY article wanted from New York, (or from Europe,) for ladies' or gentlemen's use or wear,—comfort or luxury—from a cameo to a cashmere—a scal-ring to a steam-engine.

Goods purchased at current City prices, and forwarded by Express, or as directed.

Commission, Five Per Cent.

Remittances, with orders, can be made by Express if preferred, as all Express Agents will take orders, receipt for and forward funds, and see to return of Goods.

SPECIAL CIRCULAR.

The Adams Express Company, appreciating the need of a capable medium connecting with the various Express Lines, through which personal and other orders for goods from this city, can be satisfactorily supplied, do recognize CARRINGTON & CO.'S PURCHASING AGENCY as such medium filling orders for every description of goods wanted from New York, and commend it to the attention of the public, and of our general and local agents, recommending our agents to extend to it all reasonable aid, by facilitating the distribution of its cards and circulars, and making known the advantages it affords.

ADAMS EXPRESS CO.
By W. B. DINSMORE, Prest.

NEW YORK, June, 1864.

We cheerfully concur in the above recommendation of the Adams Express Company.

AMERICAN EXPRESS COMPANY,
By HENRY WELLS, Prest.
UNITED STATES EXPRESS COMPANY,
By D. N. BARNEY, Prest.
WELLS, FARGO & CO.,
NATIONAL EXPRESS COMPANY,
By J. A. PULLEN
HARNDEN EXPRESS,
By L. W. WINCHESTER, Supt.
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No Wood-work to Swell or Split. No Thumb-screws to get out of order. Warranted with or without Cog wheels.

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That Iron well galvanized *will not rust.*

That a *simple* machine is better than a complicated one.

That a Wringer should be *self-adjusting, durable, and efficient.*

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We might fill the paper with testimonials, but insert only a few to convince the skeptical, such there be; and we say to all, *test* Putnam Wringer. Test it *thoroughly* with *any* and *all* others, and if not entirely satisfactory, return it.

PUTNAM MANUFACTURING CO.—*Gentlemen:* I know from practical experience that iron well galvanized with zinc will not oxydize or rust one particle. The Putnam Wringer is as near perfect as possible, and I can cheerfully recommend it to be the best in use. Respectfully yours,
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The above have been in use for some time, but are in good condition, and are now offered for sale through want of use.

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It is entirely noiseless.

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Has all the flavor of OLD GOVERNMENT JAVA, and is but half the price; and also that

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has twice the strength of Java, or any other Coffee whatever and wherever used by our first-class hotels and steamboats—the stewards say there is a saving of 50 per cent.

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The most Healthy,
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This Coffee is prepared under a formula from the great German chemist,

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and gives the essential full strength and delicious flavor of OLD GOVERNMENT JAVA COFFEE, which is the only quality of Coffee used in its preparation, without any of that narcotic quality which so sadly damages the nervous system in the use of even the best grades of Coffee as ordinarily prepared.

2d. It gives the essential tonic and diuretic elements of Dandelion, without the "hereby," coarse taste so disgusting, and yet always found in the ordinary Dandelion Coffee.

It is known to all acquainted with chemistry, that the essence, or oil, or whatever name may be given it, when properly and scientifically obtained from any herb or plant, is a far different article from that produced by putting that plant into water and boiling it out—permitting the escape of the most exquisite and reliable strength and leaving the coarse and earthy drugs precipitated or in solution.

So this preparation combines the exquisite aroma of the Java Coffee, with the highest essential excellence of the most choice Dandelion—yielding the spirit without the grosser earthy body of both; thereby avoiding the deleterious effects of both and becoming at the same time

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The simple fact that the preparation is from Baron Leibig, will commend it to the attention of the scientific in all parts of the country, while the use of it will at once and permanently prove to the masses everywhere that it is the long-needed desideratum—in its way.

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Neatly packed in pound papers, with full instructions for use on each label—in SIXTY POUND BOXES. Price, 30 cents per pound. A liberal discount to the trade.

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Glycerin for Gas Meters.

This article is superior to any fluid ever before used for Wet Meters, and we cannot better set forth its advantages than by giving the following letter from the Superintendent of the Covington Gas Co. The superiority of our Glycerin over all others in the market, for this purpose, is admitted by every Company that has used it. We have sold, the past winter, to the Cincinnati Gas Light and Coke Co.; to the Gas Companies of Covington, Ky.; Dayton, Springfield, Portsmouth, Urbana, and Piqua, Ohio Richmond, Ind., and Buffalo, N. Y., to whom we refer.

Glycerin is much cheaper than Whisky is now, or likely to be hereafter, and not evaporating, greatly increases the economy of its use.

OFFICE OF THE COVINGTON GAS-LIGHT CO.
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The difficulty of finding a non-evaporating and anti-freezing mixture for Wet Meters, has, in my opinion, been overcome by the use of your Glycerin Fluid.

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In fact, I can cheerfully recommend it as being cheaper and better than any other Fluid or Mixture now in use.

Very respectfully,
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We have been engaged in Manufacturing Glycerin the past six years, and from our advantage in material and the large amount we make, are enabled to offer it lower than any manufacturer in this country. We will be pleased to quote prices or to give further information.

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The extraordinary developments of the last few years have rendered indispensable to the community, A NEW and RELIABLE map of that portion of Pennsylvania, known as the OIL REGIONS. And such a Map, in the form of an Atlas, made from actual surveys of the whole territory (and the only surveys that have been made in the territory,) is now being prepared for publication by the undersigned, to which your special attention is invited. In will embrace the whole of VENANGO and portions of CRAWFORD and WARREN Counties, and is designed to be the most complete and perfect work of the kind ever published, showing distinctly—

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F. W. BEERS & CO.,
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We risk nothing when we term them a *valuable preparation*, for they are one of the few articles of the present day which are not a humbug; and we are willing and able to satisfy any person or persons who will call upon us, that the celebrated "GOLDEN BITTERS" are a genuine *bona-fide hygienic* article. It is the wish of the proprietors that the virtue of the article be tested before condemning. A decision of their merits by any one who has tried them, is worth a million of purchased bogus testimonials.

For Creating a Healthy Appetite

they are invaluable, and are unequalled as a TONIC. They are mild in their action, and operate by giving *vigor* and *strength* to the system,—not by any change they produce in the solids, but through the medium of the living principle.

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They are the most *wholesome, invigorating* and *palatable* stimulant ever offered to the public And the fact of their being prepared chemically and scientifically, precludes the possibility of a bitter, unpleasant taste, common to Bitters generally offered for sale. We especially recommend them to Ladies, and particularly to those suffering from

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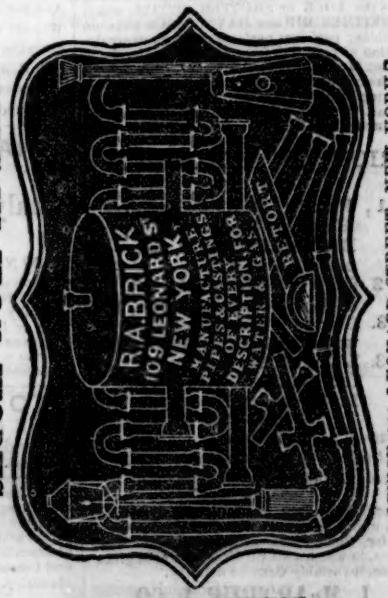

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